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ABSTRACT

This curriculum guide was designed for use in postsecondary carpentry/cabinet-making education programs in Georgia. Its purpose is to provide for the development of entry level skills in carpentry/cabinet making in the areas of knowledge, theoretical structure, tool usage, diagnostic ability, related supportive skills, and occupational survival skills. The first two sections of 10 explain the philosophy and objectives of state and local vocational education, and of the guide. In section 3, the occupational field of carpentry/cabinet making is described; and employability skills, student exit points, and tasks cross referenced to the Dictionary of Occupational Titles are listed. The curriculum structure and course outline are provided in section 4, while section 5, the main part of the guide, provides unit guides for each task to be taught. (For each task, a task description, student performance objective, suggested instructional activities, instructional materials, evaluation sections, suggested classroom hours, and related instruction tasks are included.) Section 6 contains references and resources, while student record forms comprise section 7. Following suggestions for working with special needs students (section 8), the guide concludes with a facility layout for a learning resource center and a laboratory, and definitions of terms (sections 9 and 10). (KC)

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CARPENTRY/CABINET MAKING

Post Secondary

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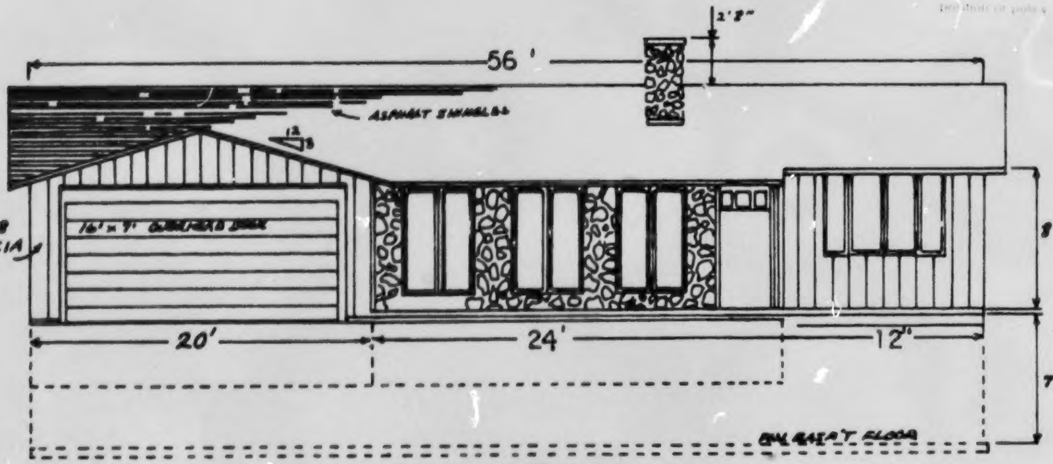
2'8"
56'
ASPHALT SHINGLES
12
5
1x8 FASCIA
16' x 7' OVERHEAD DOOR
8'1½"
20'
24'
12'
7'2"
BASEMENT FLOOR

FRONT ELEVATION

CE 032 066

CURRICULUM GUIDE

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Georgia Department of Education

CARPENTRY/CABINET MAKING

Developed Under Contractual Agreement with

Division of Program Development
Office of Vocational Education
Georgia Department of Education
Atlanta, Georgia 30334
Charles McDaniel, State Superintendent of Schools
1981

CARPENTRY/CABINET MAKING

Developed By

The University of Georgia

Under the Direction of

Dr. Paul Scott

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College of Education

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The Vocational Education Materials Center functions within the Division of Vocational Education, University of Georgia. This Center operates under grants from the U.S. Office of Education, and the Georgia State Department of Education with the support of the College of Education. The Center is comprehensive in its commitment and approach to the development and dissemination of materials in the broad field of Vocational Education.

The purpose of the Center is to increase the capability of Georgia's delivery system for Vocational Education. Specifically, the Center is committed to:

1. Develop materials to assist in the implementation of proposed curricula and to enhance the teaching of Vocational Education.
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3. Provide a production and dissemination center for Vocational Education materials.
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SECTION I

PHILOSOPHY & GOALS

VOCATIONAL EDUCATION IN GEORGIA

A. PHILOSOPHY

The Georgia Board of Education perceives vocational education as a vital component in the education of the young and adult citizens of this State. Appropriate programs of vocational education and ancillary services should be made readily available to individuals in middle schools, high schools, postsecondary area vocational-technical schools, vocational divisions of junior colleges, vocational centers, the Quick Start program and other adult programs designed to train or retrain workers for useful and satisfying employment.

Special services and assistance must be provided to those who need it in order to participate or benefit from vocational education. This includes women, minorities, the displaced homemaker and other displaced workers, those with limited English-speaking ability, the disadvantaged and the handicapped.

Since men and women spend the greater part of their lives at some form of work, the State should provide opportunities for all its citizens to develop the knowledge, skills and attitudes necessary for them to secure personally satisfying and socially useful employment.

B. PURPOSE

The purpose of vocational education shall be to improve the economic well-being of Georgia citizens by preparing individuals, through organized learning experiences, to select, obtain and advance in recognized occupations.

POSTSECONDARY VOCATIONAL EDUCATION

A. PURPOSE

The purpose of postsecondary vocational-technical education in Georgia is to improve the economic well-being of adult citizens by providing access to high quality vocational-technical training for skilled and semi-skilled occupations, for improvement of existing skills or for retraining in a new occupation.

B. OBJECTIVES

1. To provide vocational-technical education programs and ancillary services commensurate with the needs and interests of students and available job opportunities.

2. To provide vocational-technical education programs which are current with the state-of-the-art, competency-based, and offer multiple exit points to accomodate the students' occupational objectives.

3. To provide vocational-technical education programs which are articulated with available high school counterparts, to facilitate an easy transition from secondary to postsecondary levels without loss of credit.

4. To provide vocational-technical education programs such that 75% of those individuals who leave or complete a program of occupational preparation will find employment in the field, or a related field, for which trained.

5. To provide those guidance, counseling, financial aid, evaluative, job placement, remedial and other supportive programs and services needed by students to enroll, complete a program and become, or remain, employable in a skilled or semi-skilled occupation.

6. To provide needed assistance to special populations to include women, minorities, limited English-speaking, the displaced homemaker and other displaced workers, the disadvantaged and the handicapped.

7. To provide vocational-technical education programs for full-time and part-time students on campus during the day as well as the evening hours, and to provide appropriate programs for full-time and part-time students off campus in businesses and industries, comprehensive high schools and other locations within the respective schools' service areas.

8. To serve as a center for the delivery of postsecondary and adult vocational-technical education programs and services for the community and assigned service area.

STATEMENT OF LOCAL SYSTEM PHILOSOPHY , PURPOSE AND GOALS FOR VOCATIONAL EDUCATION

SECTION II

PURPOSE & OBJECTIVES

PURPOSE OF GUIDE

The purpose is defined in terms of the functional needs of each of the identified classes of users in the secondary and post secondary systems.

(a) Vocational teachers.

1. Provide a guide for organizing their program of instruction,
2. Assist in establishing program objectives,
3. Serve as a curriculum materials resource guide,
4. Improve communications with employers and advisory committees,
5. Facilitate competency based instruction,
6. Facilitate either group or self-paced instruction,
7. Include content by quarter and semester,.
8. Cross-reference with existing state developed instructional materials (PLACE packages and post secondary I.I.).

(b) Vocational supervisors and administrators.

1. Assist in defining the scope and content of their programs,
2. Provide a means to improve curriculum management functions,
3. Serve as a guide for admissions and job placement functions,
4. Improve communications with employers and advisory committees.

(c) Counseling and guidance staff.

1. Provide a data base for counseling and guidance personnel,
2. Identify student exit points (Carrer Options),
3. Serve as guide for admissions and job placement,
4. Correlate with the new State Board of Education graduation requirements,
5. Provide specific content sequencing by quarter and semester for student scheduling,
6. Provide (a) curriculum options for the disadvantaged handicapped student, (b) curriculum modifications for SPECIAL NEEDS students, (c) typical admission requirements for regular and SPECIAL NEEDS students.

(d) Local Curriculum Coordination Committees.

1. Serve as a guide in working out articulation arrangements,
2. Improve definitions of the relationship between secondary clusters and post secondary specialized programs.

This guide will serve as an ideal communication device between school personnel and the craft advisory committee. By personally reviewing the guide with the local craft advisory committee the teacher will be able to maintain the accuracy of the guide in terms of the local job market and will also be able to inform representatives of local industry regarding the content of the program itself.

CARPENTRY/CABINET MAKING PROGRAM OBJECTIVE

Given appropriate instruction, as suggested by this guide, a student completing the program should demonstrate entry level skills in Carpentry/Cabinet Making in the areas of knowledge, theoretical structure, tool usage, diagnostic ability, related supportive skills and occupational survival skills.

As the student progresses through the program, sufficient competencies will be acquired to enable the student to enter the occupational field at the following curriculum exit points.

Carpenter Helper	(D.O.T. Code 860.664-014)
Carpenter II	(D.O.T. Code 860.681-010)
Rough Carpenter	(D.O.T. Code 860.381-042)
Roofer	(D.O.T. Code 860.381-010)
Carpenter	(D.O.T. Code 860.381-022)
Cabinet Maker	(D.O.T. Code 860.280-010)
Cabinet Maker Apprentice	(D.O.T. Code 660.280-014)
Cabinet Installer	
Cabinet Finisher	

SECTION III

D. O. T. DESCRIPTION, EXIT POINTS, TASKS

DESCRIPTION OF OCCUPATIONAL FIELD

The primary purpose of this section is to provide a general orientation to the occupational field. This orientation may be used by counseling and guidance staff in helping students to select subject areas. It may also be used by instructors for new students just entering the program area. The description delimits the scope of the occupational field in terms of the range of activities involved in a series of occupations. It contains information about career potential within the occupational field, including job market conditions and trends.

The description identifies prerequisite skills and knowledge for those students interested in entering the occupational field. In addition, the Description of Occupational Exit Points are provided to aide the instructor in identifying possible jobs for early leavers. A listing of employability skills is also included in this section.

Description of Occupation

There are many classifications of the carpentry craft. A carpenter can devote his career to a speciality work, such as a cabinet maker, or to a general work, such as a construction carpenter. This decision depends upon the individual, his/her ability to work with framing or forming and precision layout with blueprints and instruments of finishing.

Working Conditions

Carpenters: As in other building trades, the carpenter's work is active and sometimes strenuous. Prolonged standing, climbing, and squatting often are necessary. Carpenters risk injury from slips or falls, from contact with a sharp or rough material, and from the use of sharp tools and power equipment. Many carpenters work outdoors.

Some carpenters change employers each time they finish a construction job. Others alternate between wage employment for contractors and self-employment on small jobs.

Cabinet Makers: A career in cabinetry requires patience and exacting skill. It is almost entirely indoor work and offers a variety of specializations. Because the work is indoors, it offers a greater assurance of steady work than do many general carpentry tasks.

Places of Employment

Carpenters: In 1978 about 1,253,000 carpenters were employed of whom nearly one out of four were self-employed. Most carpenters work for contractors and homebuilders who construct, remodel, or repair buildings and other structures. Some do construction and maintenance for government agencies, utility companies, manufacutring firms, or other large organizations.

Carpenters work throughout the country and, because of their versatility, are much less concentrated geographically than any other construction occupation.

Cabinet Makers: Once a craft of small shops and independent tradesmen, it is also, today, an assemblage of craftsmen employed in factories, mills, and outside work crews.

In these factories, modern tools and jigs and assembly-line methods allow continuous production of high-quality residential, office, and commercial fixtures.

Training, Other Qualifications, and Advancement

Carpenters and Cabinet Makers: High school vocational education courses provide a solid grounding which serves as a springboard into work situations which then provide on-the-job experience and growth. Additional training for these new employees can come in the form of apprenticeships which are described below.

Some training authorities recommend the completion of an apprenticeship as the best way to learn carpentry. A large number of workers in this trade, however, have acquired their skills informally (for example, by working as carpenters' helpers).

The apprenticeship programs, administered by local contractors' associations or by joint committees of contractors and unions, consist of 4 years of on-the-job training and a minimum of 144 hours of related classroom instruction each year. Apprenticeship applicants generally must be 14 years old and meet local requirements. For example, some locals give tests designed to measure an applicant's aptitude for carpentry.

On the job, apprentices learn elementary structural design and become familiar with common carpentry jobs such as form building, rough framing, and outside and inside finishing. They also learn to use the tools, machines, equipment, and materials of the trade. Apprentices receive classroom instruction in safety, first aid, blueprint reading and freehand sketching, basic mathematics, and different carpentry techniques. Both in the classroom and on the job, they learn the relationship between carpentry/cabinet making and the other building trades.

Informal on-the-job training provided by employers usually is less thorough than apprenticeships. The degree of training and supervision in these programs often depends on the size of the employing firm. A small contractor who specializes in home-building may provide training in only one area--for example, rough framing. In contrast, a large general contractor may provide training in several carpentry skills.

A high school or vocational education is desirable, as are courses in carpentry, shop, mechanical drawing, and general mathematics.

Employment Outlook

Job opportunities for carpenters/cabinet makers should be plentiful over the long run. Because of the large number of people employed in this field, replacement needs are high. Besides the job openings that result from the need to replace those who retire, die, or leave their job for other reasons, openings will be created by employment growth.

Most of the growth in employment will occur during the early 1980's. Through the mid 1980's, growth in the number of households and business expansion will stimulate construction activity, especially for new houses. As the number of households grows more slowly through the late 1980's the level of construction activity and the growth of employment will slow down.

Because the industry activity is sensitive to ups and downs in the economy, the number of job openings may fluctuate greatly from year to year. Workers with all-round training will be in much greater demand and will have better opportunities for advancement than those who can do only relatively simple, routine types of carpentry.

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*Occupational Outlook Handbook, 1980 ed.
Opportunities in Carpentry, 1974

Sources of Additional Information

International Union of Bricklayers and Allied Craftsmen,
International Masonry Apprenticeship Trust, 815 15th
St NW., Washington, D.C. 20005

Associated General Contractors of America, Inc., 1957 E St.
NW., Washington, D.C. 20005

Brick Institute of America, 1750 Old Meadow Rd., McLean, Va.
22101

United Brotherhood of Carpenters and Joiners of America,
101 Constitution Ave. NW., Washington, D.C. 20005

Associated Builders and Contractors, Inc., 444 N. Capitol
St. NW., Suite 409, Washington, D.C. 20001

Associated General Contractors of America, Inc., 1975 E
St. NW., Washington, D.C. 20006

National Association of Home Builders, Manpower Development
and Training Department, 15th and M St. NW., Washington,
D.C. 20005

Associated Independent Electrical Contractors of America,
1201 N. Watson Rd., Suite 201, Arlington, Texas 70611

International Brotherhood of Electrical Workers, 1125 15th
St. NW., Washington, D.C. 20005

National Association of Lighting Maintenance Contractors
1750 Old Meadow Rd., Suite 3-A, McLean, VA 22102

National Electrical Contractors Association, 7315 Wisconsin
Ave., NW., Washington, D.C. 20014

National Joint Apprenticeship and Training Committee for the
Electrical Industry, 9700 E. George Palmer Hwy., Lanham,
Md. 20802

National Association of Plumbing-Heating-Cooling Contractors,
1016 20th St. NW., Washington, D.C. 20036

National Automatic Sprinkler and Fire Control Association,
P.O. Box 719, Mt. Kisco, N.Y. 10549

*Related Occupations

860.681-010 CARPENTER

Assembles prefabricated building wall panels, using handtools and power tools. Reads blueprints to determine type of wall panel required. Selects precut studs, measures top and bottom leaders, and marks studs and leader locations, using tape measure. Lays materials on work table according to markings to fabricate wall frame. Alines sheetrock on frame. Locates, marks, and cuts receptacle openings in sheetrock, using tape measure, template, and handsaw. Reads specification sheet to determine types of windows and siding required on outside of wall panel. Selects and installs prefabricated windows in prepared openings, using hammer and nails. Measures, marks, cuts, and fastens siding and molding to form outside wall of panel, using tape measure and handtools. Moves completed panel to shipping area, using electric hoist. May direct workers in fastening studs and sheetrock. May operate nailing and routing machines to assemble wall panels and components.

860.381-042 CARPENTER, ROUGH

Builds rough wooden structures, such as concrete forms, scaffolds, tunnel and sewer supports, and temporary frame shelters, according to sketches, blueprints, or oral instructions. Examines specifications to determine dimensions of structure. Measures boards, timbers, or plywood, using square, measuring tape, and ruler, and marks cutting lines on materials, using pencil and scriber. Saws boards and plywood panels to required sizes. Nails cleats (braces) across boards to construct concrete-supporting forms. Braces forms in place with timbers, tie rods, and anchor bolts, for use in building concrete piers, footings, and walls. Erects chutes for pouring concrete. Cuts and assembles timbers to build trestles and cofferdams. Builds falsework to temporarily strengthen, protect, or disguise buildings undergoing construction. Erects scaffolding for buildings and ship structures and installs ladders, handrails, walkways, platforms, and gangways. Installs door and window bucks (rough frames in which finished frames are inserted) in designated position in building framework, and braces them with boards nailed to framework. Installs subflooring in buildings. Nails plaster grounds (wood or metal strips) to studding to provide guide for PLASTERER (const.). Fits and nails sheating (first covering of boards) on outer walls and roofs of buildings. Builds sleds from logs and timbers for use in hauling camp buildings and machinery through wooded areas.

860.280-014 CARPENTER HELPER

Performs any combination of following tasks, such as erecting and repairing, buildings, lifts, carries, and holds building materials tools, and supplies. Cleans tools, equipment, materials, and work areas. Many of these jobs are not full time, the size of the project and organization of the work determining whether a worker spends all his time on one job or is transferred from task to task as the project progresses to completion. Some workers habitually work in one branch of the industry, whereas others transfer according to the availability of work or on a seasonal basis.

860.280-010 CABINET MAKER

Constructs and repairs structural woodwork and equipment in an establishment, working from blueprints, drawings; or oral instructions. Builds, repairs, and installs counters, cabinets, benches, partitions, floors, doors, building framework, and trim, using carpenter's handtools and power tools. Installs glass in windows, doors, and partitions. Replaces damaged ceiling tile, floor tile, and sheet plastic wall coverings. May build cabinets and other wooden equipment in carpenter shop, using woodworking machines, such as powersaws, shaper, and jointer. May install window shades, venetian blinds, curtain rods, and wall fans for tenants.

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*From D.O.T.

EMPLOYABILITY SKILLS

In addition to the aptitudes, abilities, interests, physical requirements and job skills listed in the preceding Description of Occupation, employability skills exert a great deal of influence on a person's ability to get and keep a job. Surveys indicate that more people lose their jobs because of poor attitudes toward their job than for lack of job skills. For this reason it is important that information concerning the following employability skills be provided as an ongoing part of the program.

1. Getting a job
    a. Filling out job applications
    b. Developing a resume
    c. Preparing for a job interview

2. Keeping a job
    a. Be on time and regular in attendance
    b. Maintain a fair share of the work-load
    c. Work without supervision
    d. Meet production schedules
    e. Properly care for and use equipment
    f. Dress appropriately for the job
    g. Maintain good personal hygiene
    h. Develop and maintain good communication with supervisors and co-workers

EXIT POINTS

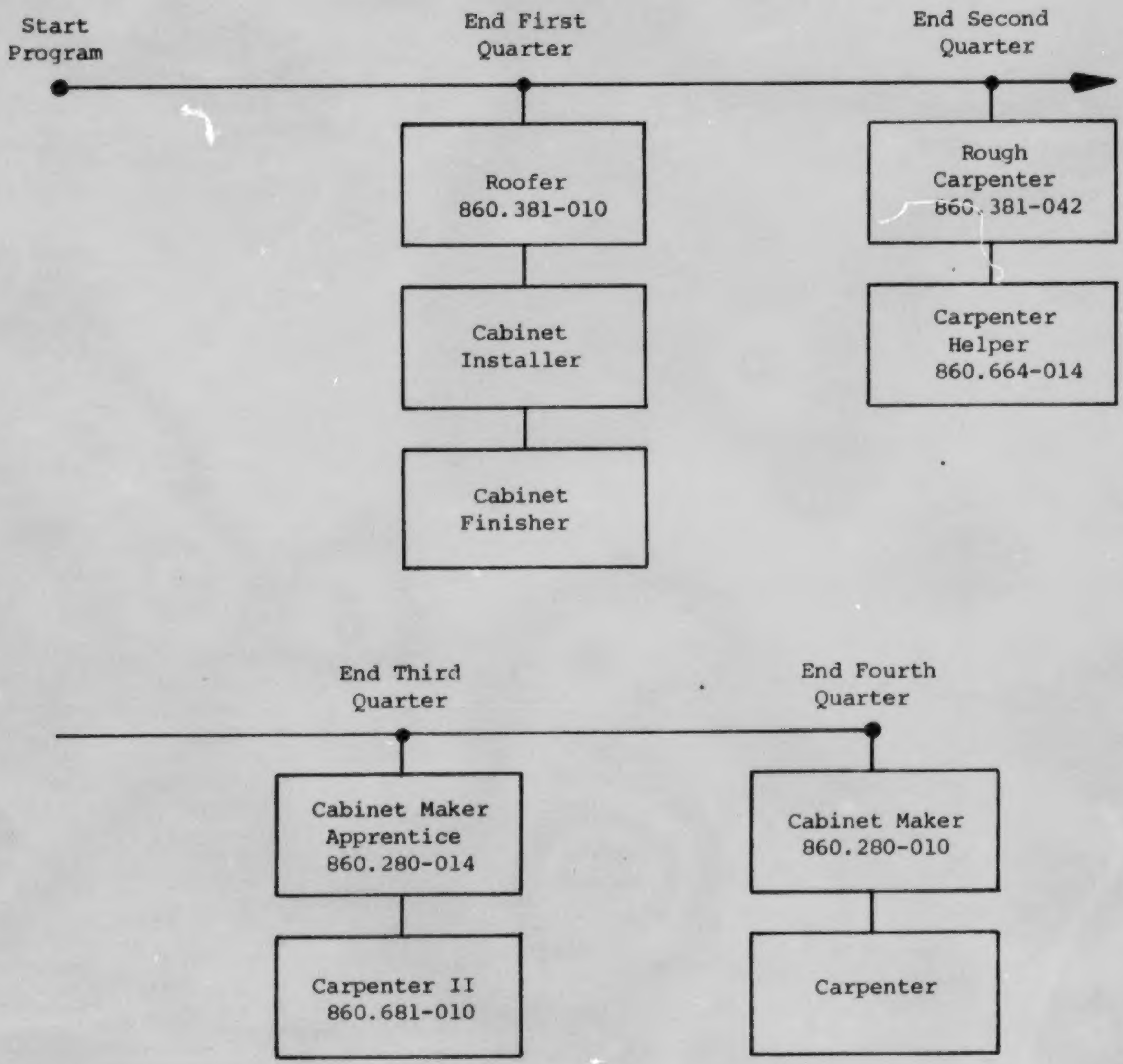
The diagram on the following page is based on the suggested course outline structure. It graphically illustrates the points in the carpentry/cabinet making program where the student should have acquired the competencies necessary for entry level employment into the job classification indicated. In many cases by the time a student reaches an exit point he/she may have acquired several competencies in addition to those required for the specific job classification.

The course outline is structured to prepare students to become workers in the carpentry or cabinet making fields, therefore, preparation for related occupations is secondary. However, it is recognized that every student, upon leaving a vocational program, should have entry level skills in some related occupation.

The Task Listing by D.O.T. Code indicates the entry level skills (tasks) required for the student to be considered employable in a specified occupation. If the local program is individualized it should be relatively easy to move a potential program leaver (drop out) into those skills (tasks) which would qualify the student for one of the listed occupations.

EXIT POINTS

CARPENTRY/CABINET MAKING


Start Program
End First Quarter
End Second Quarter
Roofer 860.381-010
Cabinet Installer
Cabinet Finisher
Rough Carpenter 860.381-042
Carpenter Helper 860.664-014
End Third Quarter
End Fourth Quarter
Cabinet Maker Apprentice 860.280-014
Carpenter II 860.681-010
Cabinet Maker 860.280-010
Carpenter

TASK LISTING

The task listing is broken into two parts--tasks for carpenters and tasks for cabinet makers. They are not combined so that it may be easier illustrated how a student can move through either phase of the program completely unhampered by the skills required for the other phase. The tasks in carpentry and in cabinet making are related and a large number of the skills obtained in one segment of the program are transferrable to the other.

TASK LISTING BY DOT CODE

CARPENTRY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	Roofer	Carpenter Helper	Rough Carpenter	Carpenter II		
	DOT DESCRIPTIONS	Roofer	Carpenter Helper	Rough Carpenter	Carpenter II		
	DOT NO.	860.381-010	860.664-014	860.381-042	860.681-010		
	DUTY I - Measurement and Layout						
C-01	Reading a rule	X	X	X	X		
	DUTY II - Blueprint Reading						
C-02	Reading a scale			X	X		
C-03	Reading orthographic drawings			X	X		
C-04	Identifying elevations			X	X		
C-05	Identifying symbols			X	X		
C-06	Identifying structural details			X	X		
C-07	Determining information from plot plans			X	X		
	DUTY III - Selecting and Using Hand and Power Tools, Construction Materials and Fastening Devices						
C-08	Building a sawhorse			X	X		

TASK LISTING BY DOT CODE

CARPENTRY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIONS	Roofer	Carpenter Helper	Rough Carpenter	Carpenter II		
	DOT NO.	860.381-010	860.664-014	860.381-042	860.681-010		
TASK NO.	TASK NAME						
	DUTY IV - Laying Out and Constructing a Floor System						
C-09	Installing sills and floor joist			X	X		
C-10	Installing floor decking			X	X		
	DUTY V - Installing Walls and Frames						
C-11	Laying out, sawing and assembling exterior frame wall			X	X		
C-12	Laying out, sawing and framing windows and doors			X	X		
C-13	Laying out, cutting and installing weatherboard			X	X		
C-14	Laying out and framing a stairwell opening			X	X		
C-15	Constructing stairs				X		

TASK LISTING BY DOT CODE

CARPENTRY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	Roofer 860.381-010	Carpenter Helper 860.664-014	Rough Carpenter 860.381-042	Carpenter II 860.681-010		
	DUTY VI - Installing Ceiling Systems						
C-16	Cutting and installing ceiling joists		X	X	X		
	DUTY VII - Building and Installing Roofing Systems						
C-17	Identifying parts of a roof	X		X	X		
C-18	Laying out, cutting and erecting common rafters as required to build a gable roof	X		X	X		
C-19	Installing a gambrel roof	X		X			
C-20	Installing a hip roof	X		X			
C-21	Installing roof decking and applying felt underlayment	X		X	X		
C-22	Laying out asphalt composition shingles	X		X	X		

TASK LISTING BY DOT CODE

CARPENTRY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIONS: Roofer DOT NO.: 860.381-010	Carpenter Helper 860.664-014	Rough Carpenter 860.381-042	Carpenter II 860.681-010		
C-23	Framing a roof opening for a chimney			X	X		
C-24	Building a porch cornice			X	X		
C-25	Building a projected box cornice			X	X		
C-26	Building a closed box cornice			X	X		
C-27	Installing dormers						
C-28	Installing flashing, roof caps and						
	vents						
	DUTY VIII - Installing Interior						
	Trim						
C-29	Installing drywall			X	X		
C-30	Filling nail holes, taping and						
	floating			X	X		
C-31	Hanging wallpaper				X		
C-32	Painting drywall		X	X	X		
C-33	Stippling drywall			X	X		
C-34	Installing crown molding				X		

TASK LISTING BY DOT CODE

CARPENTRY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS					
	DOT DESCRIPTIONS	Roofer	Carpenter Helper	Rough Carpenter	Carpenter II		
	DOT NO.	860.381-010	860.664-014	860.381-042	860.681-010		
C-35	Installing interior plywood paneling				X		
C-36	Installing a pre-hung door (interior and exterior)			X	X		
C-37	Installing a door lock set				X		
C-38	Installing a pre-hung window			X	X		
C-39	Trimming out a window				X		
C-40	Installing base molding				X		
C-41	Installing sliding and folding interior doors				X		
	DUTY IX - Installing Insulation						
C-42	Installing insulation materials				X		

TASK LISTING BY DOT CODE

CARPENTRY/CABINET MAKING

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIONS: Cabinet Maker DOT NO.: 860.280-010	Cabinet Maker Apprentice 860.280-014	Cabinet Finisher	Cabinet Installer		
	DUTY I - Using Basic Tools						
CM-01	Using hand tools (tooth cutting tools, edge cutting tools, boring tools, assembly tools, smoothing tools)	X	X	X	X		
CM-02	Using measuring tools	X	X	X	X		
CM-03	Using fasteners (nails and brads, screws and glue)	X	X	X	X		
CM-04	Using portable power tools (circular saw, saber saw, electric drill, electric router, belt sander and finishing sander)	X	X	X	X		
	DUTY II - Using Stationary Equipment For Basic Operations						
CM-05	Surfacing stock, joining edges and dressing to thickness (joiner and planer	X	X				

TASK LISTING BY DOT CODE

CARPENTRY/CABINET MAKING

	POSSIBLE EXIT POINTS						
	DOT DESCRIPTIONS	Cabinet Maker	Cabinet Maker Apprentice	Cabinet Finisher	Cabinet Installer		
TASK NO.	TASK NAME / DOT NO.	860.280-010	860.280-014				
CM-06	Ripping stock - lumber or plywood (table saw)	X	X				
CM-07	Cutting stock to length (radial arm saw)	X	X				
CM-08	Material (band saw and scroll saw)	X	X				
CM-09	Shaping to pattern (shaper)	X	X				
CM-10	Making wood joints	X	X				
CM-11	Turning stock - cylindrical and face plate (wood lathe)	X	X				
CM-12	Boring holes and cutting plugs (drill press)	X	X				
CM-13	Sanding flat surfaces (belt and disk sanding machines)	X	X	X	X		
	DUTY III - Building Cabinets						
CM-14	Billing out and sketching parts for a kitchen cabinet	X					
CM-15	Building the main body of a kitchen cabinet	X	X				

TASK LISTING BY DOT CODE

CARPENTRY/CABINET MAKING

POSSIBLE EXIT POINTS

	DOT DESCRIPTIONS	Cabinet Maker	Cabinet Maker Apprentice	Cabinet Finisher	Cabinet Installer		
	DOT NO.	860.280-010	860.280-014				
TASK NO.	TASK NAME						
CM-16	Building face plates for a kitchen cabinet	X	X				
CM-17	Building drawers for kitchen cabinets	X	X				
CM-18	Building doors for kitchen cabinets	X	X				
CM-19	Applying cabinet hardware for kitchen cabinets (doors and drawers)	X	X	X	X		
CM-20	Applying laminated plastic to top of kitchen cabinet	X		X	X		
CM-21	Making cut outs for appliances	X		X	X		
CM-22	Preparing (sanding) cabinet for finishing	X	X	X	X		
CM-23	Installing cabinets	X		X	X		

SECTION IV

CURRICULUM STRUCTURE & COURSE OUTLINE

CURRICULUM STRUCTURE

The following examples are provided to illustrate how a carpentry/cabinet making program may be structured. These examples are not intended to imply there are no other ways to structure the curriculum. It should be immediately obvious that carpentry/cabinet making can be structured as two separate programs or carpentry tasks can be blended with cabinet making tasks to build a very functional curriculum. The needs of the community served by the school and the needs of students enrolled in the program will dictate the actual structure utilized by the school.

CARPENTRY/CABINET MAKING CURRICULUM STRUCTURE

Alternative 1

Note: Classroom Hours represent the typical amount of time spent in the classroom for each class. Many tasks will require demonstrations in the shop area, but, for structure purposes demonstration time will be considered in the classroom hours. Remaining laboratory hours are usually spent with hands-on activities relating to previously studied tasks. For example, a student studying installing sills and floor systems during quarter one may spend many hours in quarter four applying this skill.

Course Number	Course	Clock Hours
	First Quarter	
	Basic Hand Tools	56
	Measure and Layout	12
	Blueprint Reading	12
	Floor Systems	12
	Laboratory Hours	220
		312
	Second Quarter	
	Stationary Equipment	81
	Walls and Frames	30
	Ceiling Systems	4
	Laboratory Hours	197
		312
	Third Quarter	
	Roofing Systems	72
	Building Cabinets	57
	Laboratory Hours	183
		312

Course Number	Course	Clock Hours
	Fourth Quarter	
	Installing Interior Trim	75
	Installing Insulation	3
	Laboratory Hours	234
		312

CARPENTRY/CABINET MAKING CURRICULUM STRUCTURE

Alternative 2

Course Number	Course	Clock Hours
	First Quarter	
	Carpentry Tools - Measuring Devices	52
	House Parts and Prefabrication	31
	Foundations and Footings	104
	Basic Machine Operation	104
	Thermal and Sound Insulation	21
		312
	Second Quarter	
	Floor, Wall and Ceiling Framing	104
	Roof Framing	52
	Intermediate Machine Operation I	104
	Installation of Doors and Windows	31
	Flooring and Underlaying	21
		312
	Third Quarter	
	Intermediate Machine Operation II	104
	Advanced Machine Operation I	52
	Stair Construction	52
	Interior Work, Wall and Ceiling Finishes and Trim	52
	Post and Beam Construction	21
	Outside Finishing	31
		312

Course Number	Course	Clock Hours
	Fourth Quarter	
	Measuring	52
	Fastening	52
	Blueprint Reading	104
	Cabinet Assembly and Finishing	52
	Advanced Machine Operation II	52
		312

CARPENTRY/CABINET MAKING CURRICULUM STRUCTURE

Alternative 3

(Based on separate one year programs)
for Carpentry and Cabinet Making)

Cabinet Making

Course Number	Course	Clock Hours
	First Quarter	
	Cabinet Making Fundamentals	78
	Basic Components of Cabinets	104
	Advanced Components of Cabinets	104
	Consumer Education	26
		312
	Second Quarter	
	Basic Birch Cabinets	104
	Basic Spanish-Style Cabinets	104
	Basic Raised Panel Cabinets	104
		312
	Third Quarter	
	Advanced Birch Cabinets	104
	Advanced Spanish-Style Cabinets	104
	Advanced Raised Panel Cabinets	104
		312
	Fourth Quarter	
	Customized Raised Panel Cabinets	78
	Customized Spanish-Style Cabinets	104
	Cabinet Finishing	52
	Cabinet Installation	52

Course Number	Course	Clock Hours
	Human Relations	26
	Total Hours:	1248
	Carpentry	
	First Quarter	
	Framing Tools and Materials	52
	Deck and Wall Construction	78
	Roof Framing	104
	Stair Framing	26
	Consumer Education	26
	Related Math for Carpentry	26
		312
	Second Quarter	
	Exterior Finish Tools and Materials	52
	Roof Finishing and Cornice Trim	104
	Exterior Wall Trim	104
	Blueprint Reading, Carpentry	52
		312
	Third Quarter	
	Interior Finish Tools and Materials	52
	Finish Flooring, Door and Window Trim	104
	Interior Stair Construction and Finish	104
	Field Projects, Carpentry	52
		312
	Fourth Quarter	
	Practicum	104
	Material Estimating	78

Course Number	Course	Clock Hours
	Site Layout and Builders Level	104
	Human Relations	26
	Total Hours:	1248

COURSE OUTLINE

The sample course outline is to be used as an example to facilitate the development of alternative outlines for the individual learner. However, the listing of the tasks within a quarter is not meant to indicate a required sequence or pattern. Many of the tasks are independent of each other, therefore, allowing a student or groups of students to begin the quarter at different points. This allows better coordination of the laboratory hours and the learning objectives may be selected according to the type of laboratory practice available. The specific information required to teach the skills and related cosmetology theory for each unit/task is included on the corresponding unit sheet in the Unit Guide section.

The time estimations are a minimum amount of time required and should be extended according to the learner's individual needs. The laboratory hours may be rearranged according to the needs of the learners and to any constraints imposed due to live work policies.

Exit points have been identified for three of the four quarters and are listed in chart form (refer to the table of contents). In addition the exit points are identified in the Task Listing by D.O.T. Code. This will provide a means for employment for learners who master the skills but not the theory. A competency record of all the tasks the learner can perform may be given to the prospective employers. These exit points can help improve problems for schools and should prevent a feeling of failure for learners who do not complete the entire program.

Suggested Course Outline for Carpentry/Cabinetmaking

Note: Classroom hours represent the typical amount of time spent in the classroom for each class. Many tasks will require demonstrations in the shop area, but, for structure purposes demonstration time will be considered in the classroom hours. Remaining laboratory hours are usually spent with hands-on activities relating to previously studied tasks. For example, a student studying installing sills and floor systems during quarter one, may spend many hours in quarter four applying this skill.

Quarter I

Unit		Hours
	Competency: Using Basic Hand Tools	
CM-01	Using Hand Tools	10
CM-03	Using Fasteners	6
CM-04	Using Portable Power Tools	20
C-08	Building a Sawhorse	20
	Competency: Measurement and Layout	
C-01	Reading a Rule	10
CM-02	Using Measuring Tools	2
	Competency: Blueprint Reading	
C-02	Reading a Scale	4
C-03	Orthographic Drawings	2
C-04	Elevation Drawings	2
C-05	Symbols for Blueprints	2
C-06	Structural Information	1
C-07	Plot Plans	1
	Competency: Laying Out and Constructing a Floor System	
C-09	Installing Sills and Floor Joists	6
C-10	Installing Floor Decking	6
	Quarter I Classroom Hours	92
	Quarter I Laboratory Hours	220
	Total Quarter Hours	312

Quarter II

Unit		Hours
	Competency: Using Stationary Equipment for Basic Operations	
CM-05	Surfacing Stock, Joining Edges and Dressing to Thickness	12
CM-06	Ripping Stock	8
CM-07	Cutting Stock to Length	4
CM-08	Cutting Material	6
CM-09	Shaping to Pattern	12
CM-10	Making Wood Joints	20
CM-11	Turning Stock	8
CM-12	Boring Holes and Cutting Plugs	6
CM-13	Sanding Flat Surfaces	6
	Installing Walls and Frames	
C-11	Laying Out, Sawing and Assembling Exterior Wall Frame	6
C-12	Laying Out, Sawing and Framing Doors and Windows	6
C-13	Laying Out, Cutting and Installing Weatherboard	4
C-14	Laying Out and Framing a Stairwell Opening	4
C-15	Constructing Stairs	4
	Installing Ceiling Systems	
C-16	Cutting and Installing Ceiling Joists	4
	Quarter II Classroom Hours	113
	Quarter II Laboratory Hours	199
	Total Quarter Hours	312

Quarter III

Unit		Hours
	Building and Installing Roofing Systems	
C-17	Identifying Parts of a Roof	2
C-18	Laying Out, Cutting and Erecting Common Rafters as Required to Build a Gable Roof	8
C-19	Installing a Gambrel Roof	8
C-20	Installing a Hip Roof	8
C-21	Installing Roof Decking and Applying Felt Underlayment	4
C-22	Laying Out Asphalt Composition Shingles	6
C-23	Framing a Roof Opening for a Chimney	6
C-24	Building a Porch Cornice	4
C-25	Building a Projected Box Cornice	4
C-26	Building a Closed Box Cornice	4
C-27	Installing Dormers	12
C-28	Installing Flashing, Roof Caps and Vents	6

Competency: Building Cabinets

CM-14	Billing Out and Sketching Parts for a Kitchen Cabinet	6
CM-15	Building the Main Body of a Kitchen Cabinet	3
CM-16	Building Face Plates for a Kitchen Cabinet	4
CM-17	Building Drawers for Kitchen Cabinets	4
CM-18	Building Doors for Kitchen Cabinets	6
CM-19	Applying Cabinet Hardware for Kitchen Cabinets (Doors and Drawers)	4
CM-20	Applying Laminated Plastic to Top of Kitchen Cabinet	8
CM-21	Making Cut-Outs for Appliances	8
CM-22	Preparing (Sanding) Cabinet for Finishing	8
CM-23	Installing Cabinets	6

Quarter III Classroom Hours	129
Quarter III Laboratory Hours	183
Total Quarter Hours	312

Quarter IV

Unit		Hours
	Competency: Installing Interior Trim	
C-29	Installing Dry Wall	3 to 5
C-30	Filling Nail Holes	8
C-31	Hanging Wallpaper	8
C-32	Painting Drywall	1
C-33	Stippling Drywall	4
C-34	Installing Crown Molding	10
C-35	Installing Interior Plywood Paneling	6
C-36	Installing a Pre-Hung Door (Interior and Exterior)	1
C-37	Installing a Door Lock Set	2
C-38	Installing a Pre-Hung Window	2
C-39	Trimming Out a Window	4
C-40	Installing Base Molding	4
C-41	Installing Sliding and Folding Interior Doors	6
	Competency Installing Insulation	
C-42	Installing Insulation Materials	3

Quarter IV Classroom Hours	64
Quarter IV Laboratory Hours	248
Total Quarter Hours	312

SECTION V

UNIT GUIDES

UNIT GUIDES

Description

In this section the tasks to be taught in each course are presented in sequential order. Each task is listed on a separate page so that it may be taken out of the guide for daily lesson planning or regrouped with other tasks to fit the individual teacher's own preference for teaching order. The task pages may be used for planning and executing group instruction or for individualized instruction. Each page in the UNIT GUIDES section contains the following information:

TASK: This is a short and concise statement of the task to be taught.

PERFORMANCE OBJECTIVE: The performance expected of the student after completing the unit is stated in stem form, without a specific statement of all conditions, equipment, and performance standard (these are listed in a criterion referenced measure in the Evaluation section of the task page).

INSTRUCTIONAL ACTIVITIES: Suggested learning activities are presented. These activities include providing information, demonstration, use of audio-visuals, and practical applications.

INSTRUCTIONAL MATERIALS: The materials that are necessary to carry out the instructional activities are listed. These include textbooks, instructional units, audio-visuals and equipment.

EVALUATION: This section contains a criterion referenced measure (where appropriate) and reference to any test items or other evaluation measures that are available to the teacher. The criterion referenced measure contains three parts--Condition, Performance and Standard.

CLASSROOM HOURS: The estimated time for completion of the instructional activities and the evaluation are indicated. This time estimate is stated in hours of classroom time (lectures, presentations, demonstrations, etc). Additional time will be required for hands-on experience in the laboratory. Estimates for this time can be found in the Course Structure and Course Outline sections.

TASK

C-01 Reading a rule

PERFORMANCE OBJECTIVE

Measure and use measurement devices to measure and layout.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying increments of an inch
b. Identifying measurement devices
c. Recognizing fractions
d. Adding and subtracting
e. Reading specific measurements
f. Measuring with a rule
g. Identifying the major parts of a framing square
h. Measuring with a framing square

Provide Demonstration On:

a. Adding and subtracting fractions
b. Measuring with a rule
c. Measuring with a framing square

Provide Practical Application On:

a. Identifying increments of an inch
b. Adding and subtracting fractions
c. Measuring with a rule
d. Measuring with a framing square

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Wagner

Student Manuals:

Georgia, Units ML 1a and 2

Tools and Materials:

a. Rule
b. Framing square

CLASSROOM HOURS

10

EVALUATION (C-01)

Given a rule and framing square, the student will identify all 1/16" measurements with 100% accuracy.

TASK

C-02 Reading a scale

PERFORMANCE OBJECTIVE

Read a scale.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying types of architect's scale
b. Identifying and listing scales on architect's scale
c. Scaling with architect's scale

Provide Demonstration On:

Using an architect's scale

Provide Practical Application On:

Scaling lines

INSTRUCTIONAL MATERIALS

Textbooks:

a. Feirer and Hutchings
b. Sundberg
c. Wagner

A/Vs:

Dorsett

Student Manuals:

Georgia, Unit BR-1

Tools and Equipment:

a. Architectural scale
b. Paper
c. Pencils

CLASSROOM HOURS

4

EVALUATION (C-02)

Given lines of different lengths and an architect's scale, the student will measure the length of each line. Each line will be to the correct scale and length.

TASK

C-03 Reading orthographic drawings

PERFORMANCE OBJECTIVE

Read orthographic drawings.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Recognizing the principles of orthographic drawing
b. Idenyifying the views in an orthographic drawing
c. Matching orthographic views to a pictorial drawing

Provide Demonstration On:

Reading orthographic drawings

Provide Practical Application On:

Reading orthographic drawings

INSTRUCTIONAL MATERIALS

Textbooks:

a. Feirer and Hutchings
b. Sundberg
c. Wagner

A/Vs:

a. Dorsett
b. Prentice-Hall, "Foundations"

Student Manuals:

Georgia, Unit BR-2

Tools and Equipment:

Blueprints

CLASSROOM HOURS 2

EVALUATION (C-03)

Given questions on orthographic drawings, the student will answer questions with 80% accuracy.

TASK

C-04 Identifying elevations

PERFORMANCE OBJECTIVE

Identify different elevations and secure basic information from a set of elevations.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying different elevation views of a drawing
b Identifying needed details from a drawing elevation

Provide Demonstration On:

a. Identifying different elevation views of a drawing
b. Sketching elevation views
c. Listing and identifying needed drawing details from an elevation

Provide Practical Application On:

Identifying different elevations and securing basic information from a set elevations

INSTRUCTIONAL MATERIALS

Textbooks:

a. Feirer and Hutchings
b. Sundberg
c. Wagner

Student Manuals:

Georgia, Unit BR-3

Tools and Equipment:

Blueprints

CLASSROOM HOURS

2

EVALUATION (C-04)

Given house elevations, the student will secure basic building information. All details will be identified with 100% accuracy.

TASK

C-05 Identifying symbols

PERFORMANCE OBJECTIVE

Identify various symbols or notations related to building parts and materials and designate specific components and dimensions of the house from the floor plan.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Recognizing principles of symbol representation
b. Identifying symbols from floor plans
c. Identifying drawing notations related to building parts and materials
d. Determining basic information from floor plan drawings
e. Listing specific details from floor plans
f. Reading a floor plan drawing for needed dimensions
g. Listing dimensions from a floor plan

Provide Demonstration On:

Interpreting symbols

Provide Practical Application On:

Interpreting symbols

INSTRUCTIONAL MATERIALS

Textbooks:

a. Feirer and Hutchings
b. Sundberg
c. Wagner

A/Vs:

Dorsett

Student Manuals:

Georgia, Unit BR 4-6

Tools and Materials:

Blueprints

CLASSROOM HOURS 2

EVALUATION (C-05)

Given blueprints, the student will identify various symbols or notations related to building parts and materials and designate specific components and dimensions of the house with 80% accuracy.

TASK

C-06 Identifying structural details from a cross section of a house

PERFORMANCE OBJECTIVE

Identify specific structural details from a cross section of a house.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Recognizing the principles of cross sectioning as used in architectural drawings
b. Locating needed details on a cross section drawing
c. Listing specific structural details from a cross section drawing
d. Recognizing the meaning of architectural detail drawings
e. Locating needed information from the details
f. Listing specific information from a set of architectural details

Provide Demonstration On:

Identifying structural details from a cross section of a house

Provide Practical Application On:

Identifying specific structural details from a cross section of a house

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Sundberg
e. Wagner

A/Vs:

Dorsett

Student manuals:

Georgia, Unit BR-7

Tools and Equipment:

Blueprints

CLASSROOM HOURS

1

EVALUATION (C-06)

Given a cross section of house, the student will identify specific structural details with 80% accuracy.

TASK

C-07 Determining information from plot plans

PERFORMANCE OBJECTIVE

Determine various information and dimensions from a plot plan.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Using plot plans
b. Recognizing principles of plot plan drawings
c. Determining various information from a plot plan
d. Identifying dimensions from a plot plan drawing

Provide Demonstration On:

a. Determining various information from a plot plan
b. Identifying dimensions from a plot plan drawing

Provide Practical Application On:

Determining various information and dimensions from a plot plan

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Sundberg
d. Wagner

A/Vs:

Dorsett

Student Manuals:

Georgia, Unit BR-9

Tools and Equipment:

Plot plans

CLASSROOM HOURS 1

EVALUATION (C-07)

Given plot plans, the student will determine various information and identify dimensions to the instructor's satisfaction.

TASK

C-08 Building a sawhorse

PERFORMANCE OBJECTIVE

Build a sawhorse.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Selection of tools and lumber
b. Using framing square to layout legs
c. Measuring, laying out and marking
d. Cutting with a cross-cut saw
e. Recognizing nail sizes and types
f. Trimming with wood rasp

Provide Demonstration On:

a. Using framing square to layout legs
b. Measuring, laying out and marking
c. Cutting with a cross-cut saw
d. Trimming with wood rasp

Provide Practical Application On:

Assembling the sawhorse

INSTRUCTIONAL MATERIALS

Student Manuals:

Georgia, Unit BSH 1 through 4

Tools and Equipment:

a. Tool kit
b. 2 x 4
c. 1 x 4
d. Plywood
e. Nails

CLASSROOM HOURS 20

EVALUATION (C-08)

Given plans and specifications, the student will layout, cut and assemble a sawhorse in 10 hours of shop work.

TASK

C-09 Installing sills and floor joist

PERFORMANCE OBJECTIVE

Layout, saw and install sills, floor joist and joist headers on a house.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Selecting lumber for house
b. Computing safe load for spans
c. Computing number of floor joists
d. Recognizing the use of anchor bolts
e. Assembling headers
f. Laying out and fastening joist on 16" centers

Provide Demonstration On:

a. Assembling headers
b. Laying out and fastening joist

Provide Practical Application On:

Sawing and installing sills and floor joist

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Wagner

A/Vs:

a. Dorsett
b. Prentice-Hall, "Floor and Wall Framing"
c. DCA, "Foundation and Floor Framing"

Student Manuals:

Georgia, Unit SMH-1

Tools and Equipment:

a. Tool kit
b. Framing lumber
c. Anchor bolts

CLASSROOM HOURS 6

EVALUATION (C-09)

Given building plans and specifications, the student will layout, cut and install sills and floor joist on a house. Material must be cut and joined within one-fourth inch. All work must be completed in accordance with specifications and plans furnished.

TASK

C-10 Installing floor decking

PERFORMANCE OBJECTIVE

Cut and install decking as a subfloor in a house.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Different types of subflooring
b. Computing square footage
c. Lining up subfloor from edge of header flush with perimeter, longways across joists
d. Determining that all joists are staggered and meeting together on top of joist half and half
e. Fastening plywood to subfloor
f. Cutting excess subfloor from edge

Provide Demonstration On:

a. Lining up subfloor from edge of header
b. Staggering plywood sheets so that no two ends rest on the same joist
c. Fastening plywood to subfloor
d. Cutting excess subfloor

Provide Practical Application On:

Installing decking in a house

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Wagner

A/Vs:

a. Dorsett
b. Prentice-Hall, "Floor and Wall Framing"
c. DCA, "Foundation and Floor Framing"

Student Manuals:

Georgia, Unit SMH-2

Tools and Equipment:

a. Tool kit
b. Plywood

CLASSROOM HOURS 6

EVALUATION (C-10)

Given building plans and specifications, the student will cut and install decking in a house as a subfloor withing time limits designated as acceptable by industry requirements.

TASK

C-11 Laying out, sawing and assembling exterior frame wall

PERFORMANCE OBJECTIVE

Layout, saw and assemble an exterior frame wall.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Marking to length and cutting sole plates and top plates
b. Laying out, cutting and squaring studs 16" on center, marking off windows and door openings
c. Purpose of corner posts and T-posts
d. Assembling corner posts and T-posts
e. Installing corners, T's, doors and windows
f. Size of nails to be used

Provide Demonstration On:

a. How to measure and cut sole plates and top plates
b. How to layout, cut and square studs 16" on center and how to mark off door and window openings
c. How to assemble corner posts and T-posts
d. How to install corners, T's, docrs and windows

Provide Practical Application On:

a. Cut and layout bottom and top plates

(continued on back)

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Wagner

A/Vs:

a. Dorsett
b. Prentice-Hall, "Floor and Wall Framing"
c. DCA, "Building Construction Exterior"

Student Manuals:

Georgia, Unit SMH-4

Tools and Equipment:

a. Tool kit
b. Framing lumber
c. Nails

CLASSROOM HOURS 6

EVALUATION (C-11)

Given a previously built foundation, working drawings and specifications, necessary framing lumber and carpenter tools, the student will layout, frame and align a section of exterior wall that includes a window and door opening and an interior partition. The following standards will apply:

> Plates will be marked to receive framing members (exact location ± one-sixteenths of an inch)
> Walls will be cut to the specified length (± one-sixteenths of an inch)
> Framing members will be positioned and nailed according to FHA specifications

INSTRUCTIONAL ACTIVITIES

Provide Practical Application On:

b. Nail top and bottom plates to end of studs
c. Place wall opening assemblies in position and nail to top and bottom plates
d. Place and nail corners and T's to plates
e. Raise and secure wall section to subfloor

TASK

C-12 Laying out, sawing and framing windows and doors

PERFORMANCE OBJECTIVE

Layout, saw and frame windows and doors according to rough-in dimensions.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Types of doors and windows
b. Determining rough openings
c. Purpose of a header
d. Measuring and cutting header length
e. Materials used in building header
f. Identifying trimmer, rough sill, and cripple studs

Provide Demonstration On:

a. Building a header
b. Cutting and installing trimmer
c. Cutting and installing rough sill and cripple studs

Provide Practical Application On:

a. Building a header
b. Cutting and installing trimmer
c. Cutting and installing rough sill and cripple studs

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Wagner

A/Vs:

a. Dorsett
b. Prentice-Hall, "Completing the Exterior"
c. DCA "Building Construction Exterior"

Student Manuals:

Georgia, Unit SMH-3

Tools and Equipment:

a. Tool kit
b. 2 x 10
c. 2 x 4

CLASSROOM HOURS

6

EVALUATION (C-12)

Given building plans and specifications, the student will layout, saw and frame windows and doors according to rough-in dimensions. All work must be in accordance with manufacturer's specifications. Material must be cut and joined with one-fourth inch.

TASK

C-13 Laying out, cutting and installing weatherboard

PERFORMANCE OBJECTIVE

Layout, cut and install weatherboard on a house.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Types of weatherboard
b. Cutting and assembling cornerboard
c. Nailing cornerboards to house
d. Laying out and installing exterior jams around doors and windows
e. Nailing weatherboards to lap for weather protection

Provide Demonstration On:

a. Techniques for cutting and assembling cornerboards
b. How to nail cornerboards and weatherboards
c. How to layout and install jams

Provide Practical Application On:

Cutting, assembling and installing weatherboad

INSTRUCTIONAL MATERIALS

Textbooks:

a. Wagner
b. Durbahn
c. Capotosto
d. Masonite Exterior Hardboard

A/Vs:

a. McGraw-Hill, "Siding Sense"
b. 3M Company, "Carpentry Exterior Trim"
c. Prentice-Hall, "Completing the Exterior"

Student Manuals:

Georgia, Unit SMH-9

Tools and Equipment:

a. Tool kit
b. Weatherboard

CLASSROOM HOURS 4

EVALUATION (C-13)

Given building plans and specifications, the student will layout, cut and install weatherboard on a house. All work must be completed in accordance with specifications and plans furnished. Material must be cut and joined within one-eighth inch. Work must also be square, plumb, level, securely fastened and completed within professionally accepted time standards for the designated job.

TASK

C-14 Laying out and framing a stairwell opening

PERFORMANCE OBJECTIVE

Layout and frame a stairwell opening according to specifications.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Determining rough opening size and location of stairwell from working drawings
b. Laying off girders and sills for placement of trimmers
c. Cutting trimmers to length and installing trimmers
d. Determing length of headers
e. Nailing headers
f. Doubting (or tripling) headers and trimmers as required

Provide Practical Application On:

Laying out and framing a stairwell opening

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Durbahn
c. Feirer and Hutchings
d. Rebaud
e. Wagner

A/Vs:

Prentice-Hall Media, "Installing Floor Joists and Subflooring"

Student Manuals:

a. Georgia, Unit STC-1
b. Georgia, Unit STC-2

Tools and Equipment:

a. Tool kit
b. 2 X 4 framing material
c. 2 X 6 framing material
d. Nails

CLASSROOM HOURS 4

EVALUATION (C-14)

Given working drawings, specifications, necessary tools, equipment and sufficient materials, the student will frame a stairwell opening according to specifications. The following standards will apply:

1. Trimmer joists will be cut to specified length (± one-sixteenth inch).
2. Studs will project beyond the inside face of the trimmer.
3. Headers will be correctly fastened to trimmer joists.
4. The number of trimmers and headers will be in agreement with specifications.
5. All stairwell framing members will be properly aligned.

TASK

C-15 Constructing stairs

PERFORMANCE OBJECTIVE

Compute layout for and build stairs.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying stair parts and dimensions
b. Types of stairs (open, closed, straight run, etc.)
c. Selecting lumber for project
d. Determining and computing rise and tread dimensions
e. Tools used in constructing stairs
f. Laying out with framing square
g. Sawing the stringer, risers and treads
h. Assemble stairs

Provide Demonstration On:

a. Computing and determining the rise and tread dimensions
b. How to layout stairs with a framing square
c. Assembling the stairs

Provide Practical Application On:

a. Computing and determining the rise and tread dimensions
b. How to layout stairs with a framing square
c. Assembling stairs

INSTRUCTIONAL MATERIALS

Textbooks:

a. Wagner
b. Feirer and Hutchings
c. Rebaud
d. Douglas and Werner

A/Vs:

a. Dorsett
b. DCA, "Building Construction Exterior"

Student Manuals:

a. Georgia, Unit STC-1
b. Georgia, Unit STC-2

Tools and Equipment:

a. Tool kit
b. 2 x 12
c. 1 x 10

CLASSROOM HOURS

8

EVALUATION (C-15)

Given building plans and specifications, the student will compute, layout, cut and install the indicated staircase. All work must be completed in accordance with specifications and plans furnished. Material must be cut and joined within one-eighth inch. Work must also be square, level, securely fastened and completed within reasonably accepted time standards for the designated job.

TASK

C-16 Cutting and installing ceiling joist

PERFORMANCE OBJECTIVE

Layout, cut and install ceiling joist.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Selecting lumber for project
b. Layout of joist
c. Computing number of joists needed
d. Cutting the ceiling joist ends to the slope of roof

Provide Demonstration On:

a. Laying out and marking distances between joist on wallplate
b. Cutting the ceiling joist ends to roof surface
c. Measuring and sawing ceiling joist to correct length per span
d. Installing ceiling joists to plates

Provide Practical Application On:

a. Laying out and marking distances between joist on wallplate
b. Cutting the ceiling joist ends to roof surface
c. Measuring and sawing ceiling joist to correct length per span
d. Installing ceiling joists to plates

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Wagner

A/Vs:

a. Dorsett
b. DCA, "Building Construction Exterior"

Student Manuals:

Georgia, Unit SMH-5

Tools and Equipment:

a. Tool kit
b. Framing lumber

CLASSROOM HOURS

4

EVALUATION (C-16)

Given working drawings, specifications and necessary tools, equipment and materials the student will layout, cut and install ceiling joist. All items on the instructor's checklist must be completed and must meet standards designated as acceptable by the instructor.

TASK

C-17 Identifying parts of a roof

PERFORMANCE OBJECTIVE

Identify the components of a roof, types of rafters, types of roofs and their uses.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Components of roof systems
b. Types of roofs
c. Purpose of roof types
d. Types of rafters
e. Use of rafters
f. Parts of a rafter

Provide Demonstration On:

a. Recognizing roof components
b. Recognizing parts of a rafter

Provide Practical Application On:

Identifying parts of a roof

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Wagner

A/Vs:

a. Dorsett
b. Prentice-Hall, "Roofing"
c. DCA, "Building Construction Exterior"

Student Manuals:

Georgia, Unit SMH-6a-d

Tools and Equipment:

Illustrations

CLASSROOM HOURS

2

EVALUATION (C-17)

Given drawings of roof systems, the student will identify components of a roof, types of rafters, types of roofs and their uses. All work must be completed with 80% accuracy.

TASK

C-18 Laying out, cutting and erecting common rafters as required to build a gable roof

PERFORMANCE OBJECTIVE

Layout, cut and erect common rafters as required to build a gable roof.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Types of rafter layout
b. Procedure to use step-off method to layout correct length and cuts on pattern rafter
c. Cutting the rafter

Provide Demonstration On:

a. Procedure to use step-off method
b. Laying out gable rafters
c. Checking step-off work with computations from framing square (unit rise)
d. Cutting and installing rafters
e. Installing barge rafters and roof rakes

Provide Practical Application On:

Laying out, cutting and erecting common rafters as required to build a gable roof

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Sundberg
e. Wagner

A/Vs:

a. Dorsett
b. Prentice-Hall, "Roofing"
c. DCA, "Building Construction Exterior"

Student Manuals:

Georgia, Unit SMH-6e

Tools and Equipment:

a. Tool kit
b. Framing lumber

CLASSROOM HOURS

8

EVALUATION (C-18)

Given building plans and specifications, the student will layout, cut and erect common rafters as required to build a gable roof. All items on the instructor's checklist must be completed and must meet standards designated as acceptable by the instructer.

Checklist

Common Rafters	Acceptable	Unacceptable
1. Calculated unit rise for common rafter	________	________
2. Determine unit length for common rafter	________	________
3. Accurately cut rafters	________	________
4. Accurately erected rafter	________	________

TASK

C-19 Installing a gambrel roof

PERFORMANCE OBJECTIVE

Layout, cut and install a gambrel roof.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Principles of gambrel roof construction
b. Procedures to build gambrel roof
c. Computing heights for upper storage
d. Determining bottom section rafter pitch
e. Computing plumb and seat cuts for bottom section rafter
f. Computing and determining top rafter rise and run for pitch

Provide Demonstration On:

a. Constructing, bracing and nailing stud wall into position at designated location
b. Computing height of ceiling joist into existing heights for upper storage
c. Determining bottom section rafter pitch
d. Cutting rafters to size
e. Computing top section, rafter rise and run for pitch
f. Determining seat and plumb
g. Nailing rafters

(continued on back)

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Durbahn
c. Feirer and Hutchings
d. Rebaud
e. Wagner

A/Vs:

a. Audio Active
b. Dorsett

Student Manuals:

Georgia, Unit RD-1

Tools and Equipment:

a. Tool kit
b. 2 x 4 or 2 x 6 framing material

CLASSROOM HOURS 8

EVALUATION (C-19)

Given tools, materials and a scale model building, the student will layout, cut and install a gambrel roof. All work must be in accordance with the instructor's specifications.

INSTRUCTIONAL ACTIVITIES (continued)

Provide Practical Application On:

Laying out, cutting and installing a gambrel roof.

TASK

C-20 Installing a hip roof

PERFORMANCE OBJECTIVE

Layout, cut and install a hip roof.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Recognizing components of a hip style roof
b. Laying out and cutting common rafters and ridge
c. Laying out and cutting both end common rafters
d. Checking layout measurement by framing square rafter table
e. Laying out seat and bird mouth cuts on hip rafter
f. Determining hip jack lengths by computing the common difference
g. Cutting and installing hip jack rafters into the roof

Provide Demonstration On:

a. Laying out and cutting common rafters and ridge
b. Assembling and nailing common rafters into ridge
c. Nailing end common rafters into roof
d. Laying out and marking hip rafter length
e. Checking layout measurement by framing square rafter table
f. Laying out seat and bird mouth cuts on hip rafter
g. Cutting hip rafter length seat and bird mouth
h. Installing hip rafters

(continued on back)

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Durbahn
c. Feirer and Hutchings
d. Rebaud
e. Wagner

Student Manuals:

Georgia, Unit RD-3

Tools and Equipment:

a. Tool kit
b. 2 x 6 framing material

CLASSROOM HOURS

8

EVALUATION (C-20)

Given tools, materials and a scale model building, the student will cut and install a gambrel roof. All work must be in accordance with instructor's specifications.

INSTRUCTIONAL ACTIVITIES (continued)

Provide Demonstration On:

i. Laying out jack rafters
j. Determining hip rafter length by computing common difference

Provide Practical Application On:

Laying out, cutting and installing a hip roof

TASK

C-21 Installing roof decking and applying felt underlayment

PERFORMANCE OBJECTIVE

Install ½" plywood roof decking and apply felt underlayment to the roof surface.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Selecting decking material
b. Laying plywood sheets with one inch overhanging eaves and gable ends
c. Fastening plywood to rafters
d. Applying felt paper

Provide Demonstration On:

a. Laying plywood sheets with one inch overhang
b. Fastening plywood
c. Applying felt paper

Provide Practical Application On:

Installing ½" plywood roof decking and applying felt underlayment to the roof surface

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Wagner

A/Vs:

a. Dorsett
b. Prentice-Hall, "Roofing"
c. DCA, "Building Construction Exterior"

Student Manuals:

Georgia, Unit SMH-7

Tools and Equipment:

a. Tool kit
b. Plywood
c. 15 lb. felt

CLASSROOM HOURS 4

EVALUATION (C-21)

Given a previously built roof, the student will install roof decking and apply felt underlayment to the roof surface. Work must be completed within time limits designated as acceptable by industry requirements.

TASK

C-22 Laying out asphalt composition shingles

PERFORMANCE OBJECTIVE

Layout asphalt composition shingles.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying materials needed for roof shingling
b. Chalking lines
c. Reversing and installing bottom first course of shingles
d. Chalking additional vertical and horizontal lines

Provide Demonstration On:

a. Measuring and chalking horizontal and vertical lines
b. Applying bottom course and starter row
c. Applying shingles

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Wagner

A/Vs:

a. Dorsett
b. Prentice-Hall, "Roofing"
c. DCA, "Building Construction Exterior"

Student Manuals:

Georgia, Units SMH 8a and b

Tools and Equipment

a. Tool kit
b. Shingles
c. Roofing nails
d. Roof

CLASSROOM HOURS 6

EVALUATION (C-22)

Given a previously built roof, the student will layout asphalt composition shingles. All work must meet shingle specification requirements.

TASK

C-23 Framing a roof opening for a chimney

PERFORMANCE OBJECTIVE

Frame a roof opening for a chimney according to specifications and with the assistance of a helper.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Laying out and cutting frame opening after regular roof rafters are installed
b. Plumbing the opening
c. Laying out opening width
d. Nailing temporary strip across opening and cutting the rafters
e. Installing double headers both top and bottom
f. Laying out the two corresponding sides of headers
g. Cutting and installing cripple rafters to each side
h. Cutting and installing trimmer rafters
i. Checking measurements of opening
j. Southern Building Code requirements for chimney clearance

Provide Practical Application On:

Framing a roof opening for a chimney according to specifications with a helper

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Durbahn
c. Feirer and Hutchings
d. Rebaud
e. Wagner

A/Vs:

Prentice-Hall Media, "Roofing"

Tools and Equipment:

a. Tool kit
b. 2 X 4 framing material
c. Nails

CLASSROOM HOURS 6

EVALUATION (C-23)

Given a roof with rafters previously installed, working drawings, a helper and all necessary tools and supplies, the student will layout, cut and frame the opening according to specifications.

TASK

C-24 Building a porch cornice

PERFORMANCE OBJECTIVE

Build a porch cornice on a porch which has been previously rough framed.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Porch cornice style (matching style to main building cornice)
b. Checking plans
    1. Type of construction
    2. Materials
    3. Details and dimensions
c. Supporting framework
d. Furring the side of the girders
e. Selecting boards and cutting them
f. Nailing boards in place
g. Cutting and installing molding as required

Provide Practical Application On:

Building a porch cornice to specifications

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Durbahn
c. Feirer and Hutchings
d. Rebaud
e. Wagner

A/Vs:

Prentice-Hall Media, "Roofing"

Tools and Equipment:

a. Tool kit
b. Nails
c. Furring strips
d. Appropriate size boards

CLASSROOM HOURS

4

EVALUATION (C-24)

Given a porch which has been previously framed, plans, tools and materials, the student will build a porch cornice according to specifications.

TASK

C-25 Building a projected box cornice for a brick veneer structure

PERFORMANCE OBJECTIVE

Build a projected box cornice.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Reading and interpreting plans
b. Framing the ceiling joists
c. Installing outside plates
d. Installing flooring on top of joists (if called for by plans)
e. Installing rafters
f. Cutting and fitting plancier board
g. Cutting and fitting fascia board
h. Cutting and installing first run of sheathing boards
i. Cutting, fitting and installing bed

Provide Practical Application On:

Building projected box cornice using a helper

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Weaver
b. Durbahn
c. Rebaud
d. Wagner

A/Vs:

Prentice-Hall Media, "Roofing"

Tools and Equipment:

a. Tool kit
b. Nails
c. Boards as required

CLASSROOM HOURS 4

EVALUATION (C-25)

Given a residential structure to be brick veneered, detailed plans for a projected box cornice, a helper, tools and materials, the student will build a projected box cornice according to specifications.

TASK

C-26 Building a closed box cornice

PERFORMANCE OBJECTIVE

Build a closed box cornice.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Styles of closed box cornices
b. Reading plans to determine dimensions
c. Measuring and cutting required lookout brackets
d. Nailing brackets on end of cornice
e. Chalk line
f. Nailing required brackets to studs and rafter tails (line up to chalk line)
g. Cutting, fitting and nailing plancier board
h. Cutting, fitting and nailing fascia board
i. Cutting, fitting and nailing the frieze board
j. Cutting, fitting and nailing molding
    1. crown molding
    2. bed molding

Provide Practical Application On:

Build a closed box cornice with a helper according to specified plans.

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Durbahn
c. Feirer and Hutchings
d. Rebaud
e. Wanger

A/Vs:

Prentice-Hall Media, "Roofing"

Tools and Equipment:

a. Tool kit
b. Boards as required
c. Brackets
d. Nails
e. Chalkline

CLASSROOM HOURS 4

EVALUATION (C-26)

Given a previously framed structure ready to receive a cornice, tools, materials, plans and a helper, the student will build a closed box cornice according to specifications.

TASK

C-27 Installing dormers

PERFORMANCE OBJECTIVE

Frame a gable dormer.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

- a. Dormers
    - 1. gable dormer
    - 2. shed dormer
- b. Framing a dormer
    - 1. Read plans and determine size of opening
    - 2. Cutting the ridge board
    - 3. Cutting and installing common rafters
    - 4. Cutting and installing valley rafters
    - 5. Cutting and installing valley jack rafters on dormed and main roof
- c. Framing a dormer with side walls
    - 1. Corner posts
    - 2. Side wall studs

- c. Framing a dormer with side walls
    - 1. Corner posts
    - 2. Side wall studs

Provide Practical Application On:

Frame a gable dormer according to specifications.

INSTRUCTIONAL MATERIALS

Textbooks:

- a. Douglas and Werner
- b. Durbahn
- c. Feirer and Hutchings
- d. Rebaud
- e. Wagner

A/Vs:

Prentice-Hall Media, "Roofing"

Tools and Equipment:

- a. Tool kit
- b. 2 x 4 framing materials
- c. 2 x 6 framing materials
- d. Nails

CLASSROOM HOURS

12

EVALUATION (C-27)

Given plans and dimensions, necessary tools and materials, the student will frame a dormer according to specifications.

TASK

C-28 Installing flashing

PERFORMANCE OBJECTIVE

Flash chimney, roof vents and valleys for asphalt shingles.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Flashing material
   1. Purpose
   2. Installation procedures
b. Flashing chimney and roof vents
   1. Chimney saddle
   2. Chiseling mortar joints
   3. Base and cap
   4. Material type for base and cap
   5. Sealing joints
   6. Counterflashing
   7. Filling mortar joints
   8. Checking for cracks and holes which may leak
c. Flashing valleys (for asphalt shingles)
   1. Material type
   2. Installing first strip
   3. Lapping joints between strips
   4. Using the chalk line
   5. HVD regulations

Provide Practical Application On:

a. Flashing chimney and roof vents
b. Flashing valleys for asphalt shingles

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Durbahn
c. Feirer and Hutchings
d. Rebaud
e. Wagner

A/Vs:

Prentice-Hall Media, "Roofing

Tools and Equipment:

a. Tool kit
b. Flashing material
c. Nails

CLASSROOM HOURS 6

EVALUATION (C-28)

a. Given a chimney or vent that extends through a roof structure, necessary tools and materials, the student will flash the chimney or vent. All cracks and holes must be filled in to eliminate leaks.

b. Given a previously decked roof with a valley, necessary tools and materials, the student will flash the valley for asphalt shingle installation. The valley width shall conform to all HVD regulations and should not leak.

TASK

C-29 Installing drywall

PERFORMANCE OBJECTIVE

Layout, cut and install drywall.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Types of drywall
b. Measuring and cutting wallboard
c. Marking and curring wallboard for electrical light boxes
d. Installing wall panels on ceiling and walls

Provide Demonstration On:

a. Measuring and curring wallboard
b. Marking and curring wallboard for electrical light boxes
c. Installing drywall

Provide Practical Application On:

Laying out, cutting, and installing drywall

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Feirer and Hutchings
c. Rebaud
d. Wagner

A/Vs:

a. Dorsett
b. DCA, "Building Construction Interior"

Student Manuals:

Georgia, Unit DI-1

Tools and Equipment

a. Tool kit
b. Drywall
c. Sheetrock nails

CLASSROOM HOURS

3 to 5

EVALUATION (C-29)

Given a previously built wall and ceiling, the student will layout, cut and install drywall. Work must be securely fastened and completed within time limits designated as acceptable by industry requirements.

TASK

C-30 Filling nail holes, taping and floating

PERFORMANCE OBJECTIVE

Use drywall cement to fill nail holes, tape joints and float out the drywall.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying needed tools and materials
b. Filling nail holes
c. Applying tape over joints and floating
d. Sanding cemented areas to smooth contour

Provide Demonstration On:

a. Applying drywall cement over nail holes
b. Spreading drywall cement with 6" broad knife over joints where panels meet
c. Cutting and installing tape over joints
d. Covering tape joints with second layer of drywall cement
e. Sanding cemented areas to smooth contour
f. Repatching and sanding where necessary

Provide Practical Application On:

Filling nail holes, taping joints and floating out the drywall

INSTRUCTIONAL MATERIALS

Textbooks:

a. Feirer and Huchings
b. Wagner

A/Vs:

a. Dorsett
b. DCA, "Building Construction Interior"

Student Manuals:

Georgia, Unit DI 2-3

Tools and Equipment:

a. Utility knife
b. Hawk
c. 6", 10" and 14" trowels
d. Drywall cement
e. Tape
f. Sheetrock
g. Measuring devices
h. T-square

CLASSROOM HOURS 8

EVALUATION (C-30)

Given drywall, the student will fill nail holes, tape joints and float out the drywall. All work must be completed within time limits designated as acceptable by industry requirements.

TASK

C-31 Hanging wallpaper

PERFORMANCE OBJECTIVE

Layout, cut, align and install wallpaper.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying tools and materials
b. Procedures for hanging
c. Types of wallpaper

Provide Demonstration On:

a. Squaring wallpaper
b. Measuring wallpaper
c. Drawing an alignment line from ceiling to floor
d. Submerging wallpaper in water
e. Wiping bubbles from wallpaper with sponge
f. Trimming around facings
g. Installing and matching other wallpaper sheets

Provide Practical Application On:

Laying out, cutting, aligning and installing wallpaper

INSTRUCTIONAL MATERIALS

Textbooks:

Wagner

Student Manuals:

Georgia, Unit DI-6

Tools and Equipment:

a. Wallpaper
b. Water trough
c. Razor knife
d. Framing square
e. Scissors
f. Pencil
g. 4' level

CLASSROOM HOURS 8

EVALUATION (C-31)

Given a painted wall section, the student will layout, cut, align and install wallpaper. All designs must match and continue around the room in the same manner.

TASK

C-32 Painting drywall

PERFORMANCE OBJECTIVE

Paint an interior wall section using water base or oil base paint.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying tools and materials
b. Recognizing the two types of interior drywall paint
c. Thinning paint if necessary
d. Cleaning brushes

Provide Demonstration On:

a. Placing drop cloth
b. Thinning paint if necessary
c. Trimming around doors, windows, etc. with paint brush
d. Painting large areas with roller
e. Cleaning tools

Provide Practical Application On:

Painting an interior wall section

INSTRUCTIONAL MATERIALS

Textbooks:

Wagner

Student Manuals:

Georgia, Unit DI-5

Tools and Equipment:

a. Paint
b. Brushes
c. Rollers
d. Pan
e. Mineral spirits
f. Water
g. Drop cloth

CLASSROOM HOURS 1

EVALUATION (C-32)

Given a drywall section, the student will paint it so there is no sheetrock bleed through. Work must meet instructor's satisfaction.

TASK

C-33 Stippling drywall

PERFORMANCE OBJECTIVE

Stipple finish a drywall ceiling.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying tools and materials
b. Preparing cement
c. Different patterns
d. Applying cement to drywall

Provide Demonstration On:

a. Thinning pre-mixed drywall cement
b. Applying coat of mixture to ceiling with roller
c. Dampening the stipple brush
d. Pressing stipple brush against ceiling until area is covered with desired pattern

Provide Practical Application On:

Stipple finishing a drywall ceiling

INSTRUCTIONAL MATERIALS

Textbooks:

a. Wagner
b. Douglas and Werner

A/Vs:

Dorsett

Student Manuals:

Georgia, Unit DI-4

Tools and Equipment:

a. Paint roller with extension handle
b. Stipple brush with handle
c. Water
d. Sheetrock putty

CLASSROOM HOURS	4

EVALUATION (C-33)

Given an unfinished drywall ceiling, the student will stipple in a uniform pattern. The desired area must be completely covered with no bleed through.

TASK

C-34 Installing crown molding

PERFORMANCE OBJECTIVE

Install crown molding in a room.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Recognizing sizes and types of crown molding
b. Measuring the wall
c. Scarfing or scribing the crown molding
d. Installing crown molding

Provide Demonstration On:

a. Measuring the first wall
b. Squaring ends of crown molding
c. Scarfing long walls
d. Coping joints where needed
e. Scribing ends
f. Nailing crown molding in place

Provide Practical Application On:

Measuring, cutting and installing crown molding

INSTRUCTIONAL MATERIALS

Textbooks:

a. Wagner
b. Feirer and Hutchings
c. Douglas and Werner

A/Vs:

a. Dorsett
b. Audio Active
c. DCA, "Building Construction Interior"

Student Manuals:

Georgia, Unit IIT-3

Tools and Equipment:

a. Tool kit
b. Coping saw
c. Mitre saw
d. Crown molding

CLASSROOM HOURS

10

EVALUATION (C-34)

Given a wall and ceiling unit, the student will measure, cut and install crown molding. All work must fit snugly with no cracks showing and should be completed within reasonably accepted time standards for the designated job.

TASK

C-35 Installing interior plywood paneling

PERFORMANCE OBJECTIVE

Layout, cut and install interior paneling.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying tools and materials
b. Measuring and marking cutouts for outlets, windows, doors, corners, etc.

Provide Demonstration On:

a. Marking and sawing paneling to size
b. Plumbing paneling
c. Securing paneling with adhesive or nails

Provide Practical Application On:

Laying out, cutting and installing plywood paneling

INSTRUCTIONAL MATERIALS

Textbooks:

a. Wagner
b. Feirer and Hutchings
c. Reband

A/Vs:

a. Dorsett
b. DCA, "Building Construction Interior"

Student Manuals:

Georgia, Unit PAN-1

Tools and Equipment:

a. Tool kit
b. Paneling
c. Adhesive or paneling nails

CLASSROOM HOURS

6

EVALUATION (C-35)

Given a wall unit, the student will layout, cut and install paneling. Paneling will be level and securely joined. All work should be completed within reasonably accepted time standards for the designated job.

TASK

C-36 Installing a pre-hung door

PERFORMANCE OBJECTIVE

Disassemble, install and reassemble a pre-hung door.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying tools and materials
b. Removing crating and disassembling the two sections of pre-hung door
c. Checking door swing for correctness
d. Plumbing and nailing the jamb

Provide Demonstration On:

a. Disassembling two sections of pre-hung door
b. Mounting the hinged door section into rough opening
c. Checking, plumbing and nailing the jamb
d. Squaring top of frame
e. Installing and nailing remaining section into opening

Provide Practical Application On:

Repeat above steps

INSTRUCTIONAL MATERIALS

Textbooks:

a. Wagner
b. Feirer and Hutchings

A/Vs:

Audio Active
Dorsett

Student Manuals:

Georgia, Unit WD-1

Tools and Equipment:

a. Tool kit
b. Pre-hung door

CLASSROOM HOURS

1

EVALUATION (C-36)

Given a rough door opening, the student will disassemble, install and reassemble a pre-hung door unit. All work must be plumb and square with 1/8" maximum clearance between door and jamb with no hammer prints on jamb.

TASK

C-37 Installing a door lock set

PERFORMANCE OBJECTIVE

Install a door lock set by laying out holes, drilling, mortising and assembling the locks.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Types of door locks
b. Measuring door thickness
c. Marking door with template
d. Setting expansive bit to correct size for hole
e. Drilling hole for door side
f. Selecting bit and drilling hole for strike cylinder hole
g. Laying out and marking front plate
h. Chiseling front plate to 1/8" depth
i. Aligning, marking and drilling latch hole on jamb

Provide Demonstration On:

a. Marking door with template
b. Drilling initial hole in door side
c. Drilling strike cylinder hole to intersect with door hole
d. Laying out and chiseling front plate
e. Aligning and marking position of latch on door jamb
f. Marking around latch plate
g. Chiseling marked area for latch plate
h. Installing lock assembly

INSTRUCTIONAL MATERIALS

Textbooks:

a. Wagner
b. Feirer and Hutchings

Student Manuals:

Georgia, Unit WD-2

Tools and Equipment:

a. Tool kit
b. Door lock set
c. Door

CLASSROOM HOURS 2

EVALUATION (C-37)

Given a door, the student will layout holes, drill, mortise and assemble locks. Work must be in accordance with lock and manufacturer's specifications.

TASK

C-38 Installing a pre-hung window

PERFORMANCE OBJECTIVE

Install a pre-hung window

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Procedure for installing window
b. Checking rough opening dimensions for correctness
c. Placing window unit into position in opening
d. Leveling and plumbing window unit with shims

Provide Demonstration On:

a. Placing window unit into opening
b. Leveling and plumbing window unit with shims
c. Nailing unit into opening with finishing nails

Provide Practical Application On:

Installing pre-hung windows

INSTRUCTIONAL MATERIALS

Textbooks:

a. Wagner
b. Feirer and Hutchings

A/Vs:

a. Audio Active
b. Dorsett
c. Prentice-Hall, "Completing the Exterior"

Student Manuals:

Georgia, Unit WD-3

Tools and Equipment:

a. Tool kit
b. Pre-hung windows

CLASSROOM HOURS

2

EVALUATION (C-38)

Given a window opening, the student will install a pre-hung window. All work must be completed in accordance with manufacturer's specifications. Work must be square, level and securely fastened and completed within reasonably accepted time standards for the designated job.

TASK

C-39 Trimming out a window

PERFORMANCE OBJECTIVE

Trim out the inside of a pre-hung window.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Identifying tools and materials
b. Marking and cutting trim
c. Marking and cutting stool
d. Setting mitre saw on 45°
e. Measuring marking and cutting casing
f. Adjusting and re-sawing casing where necessary
g. Nailing casing onto window

Provide Demonstration On:

a. Marking and cutting stool to fit against sash, jamb wallboard
b. Marking, cutting and nailing apron into position
c. Measuring, marking and casing
d. Nailing casing into position

Provide Practical Application On:

Measure, cut and install trim for a pre-hung window

INSTRUCTIONAL MATERIALS

Textbooks:

a. Wagner
b. Rebaud

A/Vs:

a. Dorsett
b. DCA, "Building Construction Interior"

Student Manuals:

Georgia, Unit IIT-1

Tools and Equipment:

a. Mitre saw
b. Tool kit
c. Casing
d. Window

CLASSROOM HOURS 4

EVALUATION (C-39)

Given a pre-hung window, the student will measure, cut and install all the necessary interior trim including sash, stool, casing and window stock according to instructor's satisfaction. All 45° joints must fit snuggly.

TASK

C-40 Installing base molding

PERFORMANCE OBJECTIVE

Cut and install base molding.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Types of base molding
b. Choosing type of base molding application
c. Selecting material needed

Provide Demonstration On:

a. Measuring base molding to fit wall
b. Mitring outside corners of base molding
c. Mitring outside corners of base molding
d. Installing base molding

Provide Practical Application On:

Cut and install base molding.

INSTRUCTIONAL MATERIALS

Textbooks

a. Wagner
b. Feirer and Hutchings
c. Douglas and Werner

A/Vs:

a. Dorsett
b. DCA, "Building Construction Interior"

Student Manuals:

Georgia, Unit IIT-2

Tools and Equipment:

a. Mitre saw
b. Tool kit
c. Coping saw
d. Base molding

CLASSROOM HOURS

4

EVALUATION (C-40)

Given a wall, the student will cut and install base molding. Inside and outside corners will fit snugly with no cracks showing. Work must be completed to instructor's satisfaction.

TASK

C-41 Installing sliding and folding interior doors

PERFORMANCE OBJECTIVE

Install sliding and folding interior doors.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Folding doors
   1. Track and head jamb
   2. Pivots
   3. Door alignment
b. Installing folding doors
   1. Reading plans and specifications
   2. Measuring door opening
   3. Installing and aligning doors
   4. Checking for operating ease
c. Sliding doors
   1. Track and head jamb
   2. Floor guide
   3. Door alignment and clearance
d. Installing sliding doors
   1. Reading plans and specifications
   2. Measuring door opening
   3. Installing track to specifications
   4. Installing floor guide and track and aligning doors
   5. Checking doors for proper operation

Provide Practical Application On:

a. Installing sliding interior doors
b. Installing folding interior doors

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Durbahn
c. Feirer and Hutchings
d. Rebaud
e. Wagner

A/Vs:

Prentice-Hall Media, "Completing the Interior"

Tools and Equipment:

a. Tool kit
b. Doors and hardware

CLASSROOM HOURS	6

EVALUATION (C-41)

a. Given a framed door opening, folding doors, hardware, specifications, and necessary tools, the student will install the folding doors to specifications so that the doors are in proper alignment and open and close with ease.

b. Given a framed door opening, interior sliding doors, hardware, specifications, working drawings and necessary tools, the student will install sliding doors according to specification. Doors must be properly aligned and open and close with ease.

TASK

C-42 Installing insulation

PERFORMANCE OBJECTIVE

Install insulation.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Purpose of insulation
   1. Thermal
   2. Sound
b. Heat transfer
c. Condensation
d. Rating insulation
   1. BTV
   2. K-factor
   3. R-factor
   4. U-factor
e. Types of insulation material
   1. Mineral
   2. Vegetable
   3. Animal
   4. Chemical
f. Insulation materials
   1. Loose fill
   2. Reflective
   3. Rigid
   4. Chemical foam
g. Where to insulate
h. Installing insulating blankets and batts
   1. Ceiling insulation
   2. Wall insulation
i. Insulating floors
   1. Purpose
   2. Supporting the insulation
   3. Ventilation of crawl spaces
   4. Vapor barriers
j. Rigid insulation
   1. Purpose
   2. Installation

(continued on back)

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Durbahn
c. Feirer and Hutchings
d. Rebaud
e. Wagner

A/Vs:

Prentice-Hall Media, "Completing the Interior"

Tools and Equipment:

a. Tool kit
b. Insulation material

CLASSROOM HOURS

3

EVALUATION (C-42)

Given a wall, ceiling or floor requiring insulation, necessary tools and insulation materials, the student will install insulation making sure all necessary areas have proper support and ventilation.

INSTRUCTIONAL ACTIVITIES (continued)

Provide Information On:

k. Insulating a masonry wall
    1. Chemical foam
    2. Rigid insulation
    3. Flexible insulation
l. Building codes

Provide Practical Application On:

Insulating a wall, ceiling or floor as assigned

TASK

CM-01 Using hand tools, (tooth cutting, edge cutting, boring, assembly and smoothing tools)

PERFORMANCE OBJECTIVE

Identify, describe and use hand tools safely and properly (hand saws, hand planes, drills, hammers and wood scrapers).

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Sharpening procedures
b. Maintenance and care of home tools
c. How to use
d. Identification of different hand tools

Provide Demonstration On:

a. Nomenclature
b. How to sharpen
c. How to use

Provide Practical Application On:

a. Naming tools
b. Sharpening tools
c. Using hand tools properly and safely
    1. Saw cross-grain to a square line.
    2. Rip with the grain to a scribbed line.
    3. Saw curved or radius line with coping saw.

INSTRUCTIONAL MATERIALS

Textbooks:

a. Lewis
b. McDonnell
c. Dahl-Wilson
d. Groneman and Glazner
e. Jones

A/Vs:

Bergwall, "Woodworking: Hand Tools Explained" and "Using Portable Power Tools"

Tools and Equipment:

a. Hand saw
b. Drill
c. Hammer
d. Nail set
e. Hand plane
f. Cabinet scraper

CLASSROOM HOURS

10

EVALUATION (CM-01)

a. Given tools and supplies, the student will cut curved lines and holes in pieces of stock and cut and rip boards to a line. Boards must be square to the edge and to the face.

b. Lewis, pp 45-47

c. Dahl-Wilson, p. 48

d. McDonnell, pp 81, 97-111, 138-39, 167-68, 190-91, 217-18, 239-40, 261-64 and 277-78.

TASK

CM-02 Using measuring tools

PERFORMANCE OBJECTIVE

Use layout tools to measure, scribe and square lines across stock.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Measure cut pieces of wood
b. Measure openings
c. Scribe lines
d. Square across stock
e. Layout and check 90° and 45° angles

Provide Demonstration On:

a. Measure lengths
b. Measure openings
c. Square lines
d. Check for 45° angles

Provide Practical Application On:

a. Measure
b. Square lines
c. Scribe lines

INSTRUCTIONAL MATERIALS

Textbooks:

a. Dahl-Wilson
b. Lewis
c. McDonnell

Tools and Equipment:

a. Rules - 6" folding
   6" extension
b. 10" tapes
c. Steel square
d. Combination square

CLASSROOM HOURS 2

EVALUATION (CM-02)

Given tools and supplies, the student will measure opening, width and length of board or plywood. Measure to nearest 1/16th inch.

TASK

CM-03 Using fasteners, (nails, screws, glue)

PERFORMANCE OBJECTIVE

Identify and use fasteners.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Sizes and kinds of nails
b. Sizes and kinds of screws
c. Drilling procedures for using screws
d. How to measure screws
e. Kinds of glue
f. Types of clamps
g. Gluing and clamping procedure
h. Ways to apply glue

Provide Demonstration On:

a. Driving nails
b. Setting nails
c. Drive screws
d. Gluing
e. Clamping

Provide Practical Application On:

a. Using screws and nails to fasten wood items
b. Gluing and clamping wood items

INSTRUCTIONAL MATERIALS

Textbooks:

a. Dahl-Wilson
b. Lewis

A/Vs:

Stanley

Tools and Equipment:

a. Hammer
b. Nails
c. Screws
d. Nail set
e. Glue
f. Clamps

CLASSROOM HOURS 6

EVALUATION (CM-03)

a. Given tools and supplies, the student will drive and set nails and use screws to fasten wood parts. The student will describe kinds and sizes of nails and screws and use correct techniques to install fasteners.

b. Lewis, pp 198-99

TASK

CM-04 Using portable power tools (saws, drills, router and sanders)

PERFORMANCE OBJECTIVE

Use portable power tools to saw, drill, rout and sand.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Tool selection (the right tool for the job)
b. Sanders, routers, saws and drills
c. Proper selection of drill bits, router bits, saws and sand paper

Provide Demonstration On:

a. Sand an item made of wood
b. Drill holes
c. Rout
d. Saw with portable electric saw

Provide Practical Application On:

Using portable power tools

INSTRUCTIONAL MATERIALS

Textbooks:

a. Dahl-Wilson
b. Lewis
c. Jones
d. Drake

A/Vs:

Career Aids, "Woodworking Power Tools" and "Using Portable Power Tools"

b. Bergwall, "Woodworking Explained: Building a Better Bookshelf"
c. Prentice-Hall, "Woodworking: Power Tools"

Tools and Equipment:

a. 24" Belt sander
b. Electric hand saw (skill)
c. 3/8" and 1/2" drills
d. Portable router
e. Saber saw

CLASSROOM HOURS

20

EVALUATION (CM-04)

a. Given tools and supplies, the student will sand items made of wood, drill holes for screws and bolts, cut boards or plywood with skill saw and rout with portable router. The student will also identify and use all portable power tools used in cabinet making.

b. Lewis, pp 57-58

TASK

CM-05 Surfacing stock, jointing edges and dressing lumber to thickness

PERFORMANCE OBJECTIVE

Demonstrate the ability to surface a board, dress to thickness and joint one edge straight.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Jointer
b. Planer
c. Safety on machines
d. Proper procedure
e. De Cristoforo

Provide Demonstration On:

a. Face a piece of stock
b. Dress a piece of stock
c. Joint a piece of stock

INSTRUCTIONAL MATERIALS

Textbooks:

a. Lewis
b. Dahl-Wilson
c. Jones

A/Vs:

a. Career Aids, "Woodworking: Power Tools" and "Woodworking Machine Operations Explained"
b. Prentice-Hall, "Woodworking: Power Tools"

Tools and Equipment:

a. Jointer
b. Planer
c. Stack 12" long or longer

CLASSROOM HOURS 12

EVALUATION (CM-05)

a. Given equipment and supplies, the student will surface a board, dress to thickness and joint one edge straight.

b. Lewis, pp 71-72

TASK

CM-06 Ripping stock

PERFORMANCE OBJECTIVE

Set up and rip lumber or plywood to desired width.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Setting up rip saw
b. Ripping material
c. Safety
d. Types of saw blades
e. Jobs that can be done on table saw (grooves, dadoes and rabbets)

Provide Demonstration On:

a. How to use machine for grooves, dadoes and rabbets
b. How to set up and rip material

Provide Practical Application On:

a. Set up machine
b. Rip stock

INSTRUCTIONAL MATERIALS

Textbooks:

a. Lewis
b. Groneman and Glazener

A/Vs:

a. Bergwall, "Woodworking: Machine Operations Explained:
b. Prentice-Hall, "Woodworking: Power Tools" and "Woodworking: Power Saws"

Tools and Equipment:

a. Rule
b. Table saw
c. Material to use

CLASSROOM HOURS 8

EVALUATION (CM-06)

a. Given tools and supplies, the student will set up table saw, rip material to desired width, cut dadoes, rabbets and grooves.

b. Lewis, pp 89-91

TASK

CM-07 Cutting stock to length

PERFORMANCE OBJECTIVE

Use radial arm saw.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Types of saw blades
b. Changing blades
c. Safety procedures
d. Setting up procedures

Provide Demonstration On:

a. Cutting square
b. Cutting 45° angles
c. How to set stops
d. How to make adjustments
e. Blades to use

Provide Practical Application On:

a. Change blades
b. Cut material
c. Set stops
d. Safety measures

INSTRUCTIONAL MATERIALS

Textbooks:

a. Lewis
b. Dahl-Wilson

Tools and Equipment:

a. Radial arm saw
b. Material to cut
c. Square
d. Clamps

CLASSROOM HOURS 4

EVALUATION (CM-07)

a. Given tools and equipment, the student will cut, to given length, lumber and plywood. The student will also describe and adjust the parts of the radial arm saw.

b. Lewis, pp 102-103

TASK

CM-08 Cutting material (band saw and scroll saw)

PERFORMANCE OBJECTIVE

Use the band saw and scroll saw.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Band saw blades
b. Removing and replacing blades
c. Making adjustment to the machine
d. Cutting material on band saw
e. Cutting inside and outside radius

Provide Demonstration On:

a. Setting up machine
b. Making adjustments
c. Cutting material on band saw
d. Safety

Provide Practical Application On:

a. Cut material (radius)
b. Cut miters
c. Cut circles
d. Resaw stock
e. Adjust saw

INSTRUCTIONAL MATERIALS

Textbooks:

Lewis

A/Vs:

Bergwall

Tools and Equipment:

a. Band saw
b. Square
c. Pencil
d. Material

CLASSROOM HOURS 6

EVALUATION (CM-08)

a. Given tools and supplies, the student will cut radius pieces of material inside and outside, select and install blades and adjust machine so blade is operating properly.

b. Lewis, pp 116-18

TASK

CM-09 Shaping the pattern using shaper and overarm router

PERFORMANCE OBJECTIVE

Use shaper and overarm router to shape wood into a pattern.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. How to install cutters and adjust machine
b. Safety procedures
c. Types of cutters
d. Types of bits
e. Shaping with straight fence

Provide Demonstration On:

a. Selecting proper cutter
b. Set up machines
c. Run stock to pattern

Provide Practical Application On:

a. Shape material to a given pattern
b. Rout material using overarm router
c. Set up and adjust machine

INSTRUCTIONAL MATERIALS

Textbooks:

Lewis

A/Vs:

Bergwall

Tools and Equipment:

a. Patterns to follow
b. Shaper
c. Router
d. Stock

CLASSROOM HOURS 12

EVALUATION (CM-09)

a. Given tools, supplies and equipment, the student will describe the parts of the shapes and basic kinds of shaper cutters. The student will install and adjust cutters, shape straight work with a fence and set up and use the overarm router for routing operations.

b. Lewis, pp 126-27

TASK

CM-10 Making wood joints

PERFORMANCE OBJECTIVE

Make basic wood joints.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Selecting the proper wood joint
b. Types of wood joints
c. Machines used to make joints
d. Safety

Provide Demonstration On:

a. Best joints for a given job
b. How to make joints
c. How joints should fit

Provide Practical Application On:

a. Make martice and tenon joint
b. Make dove tail joint
c. Make half lap joint
d. Make rabbet joint
e. Make tongue and groove joint
f. Make dado joint
g. Make spline joint
h. Make a doweled edge joint
i. Make miter joint

INSTRUCTIONAL MATERIALS

Textbooks:

a. Lewis
b. Dahl-Wilson

Tools and Equipment:

a. Materials
b. Square
c. Table saw
d. Radial arm saw
e. Router
f. Shaper

CLASSROOM HOURS

20

EVALUATION (CM-10)

a. Given tools, supplies and equipment, the student will make basic woodworking joints and list advantages and disadvantages of each joint.

b. Lewis, pp 186-87

TASK

CM-11 Turning stock (cylindrical and face plate)

PERFORMANCE OBJECTIVE

Operate the wood lathe and turn stock.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Wood lathe (purpose and parts)
b. Chisels
c. Gouges
d. Spindle turning
e. Face plate turning
f. Sanding

Provide Demonstration On:

a. Setting up machine
b. How to use chisels
c. Cuts made on lathe
d. How to sharpen and care for chisels

Provide Practical Application On:

a. Set up and turn stack
b. Set up and turn with face plate
c. Sharpen chisels
d. Sand items turned

INSTRUCTIONAL MATERIALS

Textbooks:

Lewis

A/Vs:

Bergwall

Tools and Equipment:

a. Stock
b. Wood lathe
c. Chisels and gouges

CLASSROOM HOURS 8

EVALUATION (CM-11)

a. Given tools, supplies and equipment, the student will turn stock on wood lathe to a pattern or specific size and make a face plate turning of a specified design.

b. Lewis, pp 146-47

TASK

CM-12 Boring holes and cutting plugs

PERFORMANCE OBJECTIVE

Bore holes and cut plugs.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Kinds of wood bits
b. Sizes of wood bits
c. Drill press purpose
d. Plug cutters
e. Clamping material for boring

Provide Demonstration On:

a. Boring holes
b. Cutting plug
c. Safety

Provide Practical Application On:

a. Bore hole square to work
b. Bore hole at an angle to the work
c. Cut plugs for specific size hole

INSTRUCTIONAL MATERIALS

Textbooks:

Lewis

A/Vs:

Bergwall

Tools and Equipment:

a. Drill press
b. Material
c. Bits
d. Plug cutters
e. Clamps
f. Rule

CLASSROOM HOURS 5

EVALUATION (CM-12)

a. Given tools, supplies and equipment, the student will drill holes to a specific size and cut plugs to a specific size.

b. Lewis, pp 156-57

TASK

CM-13 Sanding flat surfaces

PERFORMANCE OBJECTIVE

Sand flat surface using a black belt sander and a disk and spindle sander.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Sanding machine
b. Sanding belts
c. Safety standards
d. Kinds of paper and grits available

Provide Demonstration On:

a. Operating belt sander
b. Operating disk sander
c. Operating a spindle sander

Provide Practical Application On:

a. Sand flat surface
b. Sand curved edge
c. Sand with disk sander

INSTRUCTIONAL MATERIALS

Textbooks:

Lewis

A/Vs:

Bergwall

Tools and Equipment:

a. Materials
b. Sanding machine
c. Sanding belts

CLASSROOM HOURS 6

EVALUATION (CM-13)

a. Given tools, materials and equipment, the student will sand flat stock, sand curved edges, and sand with disk sander.

b. Lewis, p. 165

TASK

CM-14 Billing out and sketching parts for kitchen cabinet

PERFORMANCE OBJECTIVE

Make a cutting list of the parts of a cabinet and sketch each piece that has detailed work.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Blueprints
b. How to sketch pieces of material
c. How to put sizes of material on paper

Provide Demonstration On:

Showing how to sketch material

Provide Practical Application On:

Show parts of cabinet showing all detail work including net sizes of each piece of material

INSTRUCTIONAL MATERIALS

Textbooks:

Lewis

Tools and Equipment:

a. Pencil
b. Paper
c. Drawings

CLASSROOM HOURS 6

EVALUATION (CM-14)

a. Given supplies, the student will draw sketches and list pieces of material according to thickness, width and length. The sketch must be clear, concise and easy to read.

b. Lewis, pp 228-29

TASK

CM-15 Building the main body of a standard sized kitchen cabinet

PERFORMANCE OBJECTIVE

Construct a typical base cabinet unit of specified size.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Parts of a base cabinet, ends, top, bottom divisions and shelves
b. How to cut parts, how to mill parts
c. Information on what joints to use
d. How to assemble parts (glue and nail)

Provide Demonstration On:

a. Cutting parts
b. Milling for assembly
c. Assembly

Provide Practical Application On:

a. Cut and mill parts for base cabinet
b. Assemble base cabinet

INSTRUCTIONAL MATERIALS

Textbooks:

a. Dahl-Wilson
b. Lewis
c. Ramsey and Sluper

Tools and Equipment:

a. Table saw
b. Radial arm saw
c. Router
d. Hammer
e. Square
f. Rule
g. Nail set
h. Glue

CLASSROOM HOURS 3

EVALUATION (CM-15)

Given tools, supplies and equipment, the student will construct a typical base cabinet unit, according to drawings and specifications.

TASK

CM-16 Building face plates for kitchen cabinets

PERFORMANCE OBJECTIVE

Construct and install face plates to base kitchen cabinets.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Parts of face plates and material to use
b. How to cut out, mill and assemble parts
c. How to determine what joints to use
d. How to apply to cabinet

Provide Demonstration On:

a. Cutting parts
b. Milling parts
c. Assembling of plates
d. Applying to cabinet

Provide Practical Application On:

a. Cutting and milling parts of the face plate
b. Applying face plates to face cabinets

INSTRUCTIONAL MATERIALS

Textbooks:

a. Dahl
b. Lewis

Tools and Equipment:

a. Table saw
b. Desalt saw
c. Jointer
d. Planner
e. Martice machine
f. Tenon machine
g. Hammer
h. Clamps
i. Glue
j. Nails

CLASSROOM HOURS

4

EVALUATION (CM-16)

Given tools, supplies and equipment, the student will construct face plates for base kitchen cabinet and apply and fit to cabinet according to drawings and specifications.

TASK

CM-17 Building drawers for kitchen cabinets

PERFORMANCE OBJECTIVE

Measure opening for drawers, cut and mill material and assemble drawers.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Parts of drawers
b. Measure for drawers
c. How to cut and mill parts
d. Correct joints
e. How to assemble
f. How they should fit

Provide Demonstration On:

a. Cutting parts
b. Assembly
c. Installing drawers into cabinet

Provide Practical Application On:

a. Cut and mill parts for drawers
b. Assemble drawers
c. Install drawers

INSTRUCTIONAL MATERIALS

Textbooks:

a. Dahl
b. Lewis

Tools and Equipment:

a. Table saw
b. Radial arm saw
c. Jointer
d. Planer
e. Router
f. Shaper
g. Hammer
h. Nails
i. Glue
j. Square
k. Clamps

CLASSROOM HOURS 4

EVALUATION (CM-17)

Given supplies, tools and equipment, the student will construct drawers for a kitchen cabinet according to drawings and specifications. Drawers must be free and easy to use.

TASK

CM-18 Building doors for kitchen cabinets

PERFORMANCE OBJECTIVE

Measure openings for doors. Cut and mill material and assemble doors.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Types of cabinet doors
b. Measure for doors
c. How to cut and mill parts
d. Correct joints to use
e. How to assemble
f. Proper clearance for doors

Provide Demonstration On:

a. Cutting parts
b. Assembly
c. Installing doors to cabinet

Provide Practical Application On:

a. Cut and mill parts for cabinet doors
b. Assemble doors
c. Install doors on cabinet

INSTRUCTIONAL MATERIALS

Textbooks:

Lewis

Tools and Equipment:

a. Table saw
b. Radial arm saw
c. Planer
d. Shaper
e. Jointer
f. Hammer
g. Nails
h. Glue
i. Clamps

CLASSROOM HOURS 6

EVALUATION (CM-18)

a. Given supplies, tools and equipment, the student will construct doors for kitchen cabinet according to drawings and specificaions. Doors must swing free and have proper clearance.

b. Lewis, pp 276-77

TASK

CM-19 Applying hardware for kitchen cabinets, drawers and doors

PERFORMANCE OBJECTIVE

Demonstrate the ability to apply hardware to kitchen cabinets, doors and drawers.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Types of hinges
b. Types of drawer slides
c. Catches
d. Pulls and knobs

Provide Demonstration On:

a. Installing hinges
b. Installing drawer slides
c. Installing catches
d. Installing pulls and knobs
e. Checking for correct clearances

Provide Practical Application On:

a. Installing hinges
b. Installing drawer slides
c. Installing catches
d. Installing pulls for doors and drawers

INSTRUCTIONAL MATERIALS

Textbooks:

a. Lewis
b. Groneman and Alazner
c. Jones

Tools and Equipment:

a. Hinges, screws
b. Drawer slides
c. Catches
d. Pulls
e. Drill
f. Drill bits
g. Rule
h. Screwdriver
i. Nail set and hammer

CLASSROOM HOURS 4

EVALUATION (CM-19)

a. Given tools and supplies, the student will apply all hardware to a kitchen cabinet. Doors must work free and easy, line up properly and look neat.

b. Lewis, pp 276-77

TASK

CM-20 Applying laminated plastic to top of kitchen cabinet

PERFORMANCE OBJECTIVE

Apply laminated plastic to kitchen cabinet.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Plastic
b. Contact glue
c. Cutting
d. Gluing procedures
e. Trimming procedures
f. Sanding

Provide Demonstration On:

a. How to cut
b. How to glue
c. How to trim
d. How to sand (finish)

Provide Practical Application On:

a. Cut material
b. Glue material
c. Trim material
d. Finish edges

INSTRUCTIONAL MATERIALS

Textbooks:

a. Lewis
b. Groneman and Glazener

A/Vs:

Career Aids, "Woodworking: Finishing"

Tools and Equipment:

a. Glue
b. Saw (table)
c. Brush or roller
d. Tarmic trimmer
e. Laminate fill
f. Sand blocks

CLASSROOM HOURS

EVALUATION (CM-20)

a. Given supplies, tools and equipment, the student will apply laminated plastic to a kitchen cabinet top according to drawings and specifications. The top must be stuck down tightly. Edges must be trimmed and smooth.

b. Lewis, p. 285

TASK

CM-21 Making cut-outs for appliances in kitchen cabinet top

PERFORMANCE OBJECTIVE

Make cuts in top of cabinet for sinks and drop in appliances.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Sinks
b. Ranges
c. How to locate, mark and make cuts

Provide Demonstration On:

a. Boring hole in top
b. Cut with saber saw
c. Install sink

Provide Practical Application On:

a. Lay off cut-outs
b. Bore starter hole
c. Saw proper size of appliances used
d. Install appliances

INSTRUCTIONAL MATERIALS

A/Vs:

Bergwall, "Woodworking: Machine Operations Explained"

Tools and Equipment:

a. Drill and bit
b. Saber saw
c. Appliances to be installed
d. Caulking and gum
e. Screwdriver

CLASSROOM HOURS 8

EVALUATION (CM-21)

Given tools and supplies, the student will make cut-outs in top installed appliances, according to manufacturer's specifications.

TASK

CM-22 Preparing cabinet for finishing (sanding)

PERFORMANCE OBJECTIVE

Prepare cabinet for finishing.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Sand paper
b. Grit paper to use
c. Sand proper direction

Provide Demonstration On:

a. Machines
b. Paper
c. Sanding belts

Provide Practical Application On:

a. Sand cabinet
b. Proper paper

INSTRUCTIONAL MATERIALS

Textbooks:

a. Groneman and Glazener
b. Jones

A/Vs:

a. Prentice-Hall, "Woodworking: Finishing"
b. Bergwall, "Woodworking: Explained: Building a Better Bookshelf"

Tools and Equipment:

a. Sanding machines
b. Sanding blocks
c. Sand paper

CLASSROOM HOURS

8

EVALUATION (CM-22)

Given tools and supplies, the student will sand a cabinet in preparation for the finishing material (stain, paint, etc.). Joints must be flush and smooth with all wood showing sanded with medium or fine paper.

TASK

CM-23 Installing kitchen cabinets

PERFORMANCE OBJECTIVE

Install kitchen cabinets.

INSTRUCTIONAL ACTIVITIES

Provide Information On:

a. Cabinets
b. Installing bottom cabinet
c. Installing upper cabinet
d. Installing countertop
e. Installing molding

Provide Practical Application On:

Installing kitchen cabinets

INSTRUCTIONAL MATERIALS

Textbooks:

a. Douglas and Werner
b. Durbahn
c. Feirer and Hutchings
d. Rebaud
e. Wagner

A/Vs:

Prentice-Hall, "Completing The Interior"

Tools and Equipment:

a. Tool kit
b. Cabinets
c. Screws
d. Level

CLASSROOM HOURS 6

EVALUATION (CM-23)

Given mill built cabinets, working drawings and specifications and all necessary tools, equipment and hardware, the student will be able to install all cabinets and countertops to specifications with all cabinets being plumb and level and firmly secured.

SECTION VI

REFERENCES, RESOURCES

RESOURCES

Instructional Resource Matrix

The Instructional Resource Matrix lists the instructional resources required to carry out the learning activities in each unit in the program. The resources are divided into the categories of audio visuals, textbooks and student materials.

Audio visuals are identified by the following symbols: slide/tapes (ST), video-cassette tapes (VC) and transparencies (TR).

Textbooks are identified by the author(s)/publisher and title.

Textbook List

This list identifies the textbooks referenced in the Unit Guide section and on the Instructional Resource Matrix.

Audio Visuals

The suppliers of the audio visuals referenced on the Unit Guides and the Instructional Resource Matrix are listed.

Additional Instructional Resources

This section lists instructional resources which may be used in addition to those primary resources listed on the Unit Guides. The resources are divided into two categories.

Textbooks: A list of textbooks in addition to those referenced on the Unit Guides is provided.

Audio Visuals: A list of suppliers of audio visuals in addition to those referenced on the Unit Guides is provided. Also identified are the types of audio visuals available.

Resource Addresses

Addresses of instructional materials referenced on the Unit Guides and in the Instructional Resource Matrix.

CURRICULUM AREA: CARPENTRY/CABINET MAKING

TASK LISTING	INSTRUCTIONAL MATERIAL REFERENCES		
	Audio-Visuals	Textbooks	Student Materials
C-01 Reading a rule		Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner	Georgia: Units ML-1a; ML-2
C-02 Reading a scale	Dorsett (ST)	Wagner; Feirer and Hutchings; Sundberg	Georgia: Unit BR-1
C-03 Reading orthographic drawings	Dorsett (ST); Prentice-Hall: "Foundations" (ST)	Wagner; Feirer and Hutchings; Sundberg	Georgia: Unit BR-2
C-04 Identifying elevations	Dorsett (ST); Prentice-Hall: "Foundations" (ST)	Wagner; Feirer and Hutchings; Sundberg	Georgia: Unit BR-3
C-05 Identifying symbols	Dorsett (ST)	Wagner; Feirer and Hutchings; Sundberg	Georgia: Unit BR-4; BR-5; BR-6
C-06 Identifying structural details from a cross section of a house	Dorsett (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Sundberg	Georgia: Unit BR-7
C-07 Determining information from plot plans	Dorsett (ST)	Douglas and Werner; Feirer and Hutchings; Wagner; Sundberg	Georgia: Unit BR-9
C-08 Building a sawhorse			Georgia: Units BSH-1; BSH-2; BSH-3; BSH-4

CURRICULUM AREA: CARPENTRY/CABINET MAKING

TASK LISTING	INSTRUCTIONAL MATERIAL REFERENCES		
	Audio-Visuals	Textbooks	Student Materials
C-09 Installing sills and floor joists	Dorsett (ST); Prentice-Hall: "Floor and Wall Framing" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner	Georgia: Unit SMH-1
C-10 Installing floor decking	Dorsett (ST); Prentice-Hall: "Floor and Wall Framing" (ST); DCA: "Foundation and Floor Framing" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner	Georgia: Unit SMH-2
C-11 Laying out, sawing and assembling exterior frame wall	Dorsett (ST); Prentice-Hall: "Floor and Wall Framing (ST); DCA: "Building Construction Exterior" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner	Georgia: Unit SMH-4
C-12 Laying out, sawing and framing windows and doors	Dorsett (ST); Prentice-Hall: "Completing the Exterior" (ST); DCA: "Building Construction Exterior" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner	Georgia: Unit SMH-3
C-13 Laying out, cutting and installing weatherboard	McGraw-Hill: "Siding Sense" (MF); 3-M Company: "Carpentry Exterior Trim" (TR); Prentice-Hall: "Completing the Exterior" (ST)	Capotosto; Wagner; Durbahn; Masonite	Georgia: Unit SMH-9
C-14 Laying out and framing a stairwell opening	Prentice-Hall: "Installing Floor Joists and Sub-Flooring" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Durbahn	Georgia: Units STC-1; STC-2

CURRICULUM AREA: CARPENTRY/CABINET MAKING

TASK LISTING	INSTRUCTIONAL MATERIAL REFERENCES		
	Audio-Visuals	Textbooks	Student Materials
C-15 Constructing stairs	Dorsett (ST); DCA: "Building Construction Exterior" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner	Georgia: Units STC-1; STC-2
C-16 Cutting and installing ceiling joist	Dorsett (ST); DCA: "Building Construction Exterior" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner	Georgia: Unit SMH-5
C-17 Identifying parts of a roof	Dorsett (ST); Prentice-Hall: "Roofing" (ST); DCA: "Building Construction Exterior" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner	Georgia: Unit SMH-6a; SMH-6b; SMH-6c; SMH-6d
C-18 Laying out, cutting and erecting common rafters as required to build a gable roof	Dorsett (ST); Prentice-Hall: "Roofing" (ST); DCA: "Building Construction Exterior" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Sundberg	Georgia: Unit SMH-6e
C-19 Laying out, cutting and installing a gambrel roof	Audio Active (T); Dorsett (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Durbahn	Georgia: Unit RD-1
C-20 Installing a hip roof	Audio Active (T); Dorsett (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Durbahn	Georgia: Unit RD-3

CURRICULUM AREA: CARPENTRY/CABINET MAKING

TASK LISTING	INSTRUCTIONAL MATERIAL REFERENCES		
	Audio-Visuals	Textbooks	Student Materials
C-21 Installing roof decking and applying felt underlayment	Audio Active (T); Dorsett (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner	Georgia: Unit SMH-7
C-22 Laying out asphalt composition shingles	Audio Active (T); Dorsett (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner	Georgia: Units SMH-8a; SMH-8b
C-23 Framing a roof opening for a chimney	Prentice-Hall: "Roofing" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Durbahn	
C-24 Building a porch cornice	Prentice-Hall: "Roofing" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Durbahn	
C-25 Building a projected box cornice for a brick veneer structure	Prentice-Hall: "Roofing" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Durbahn	
C-26 Building a closed box cornice	Prentice-Hall: "Roofing" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Durbahn	

CURRICULUM AREA: CARPENTRY/CABINET MAKING

TASK LISTING	INSTRUCTIONAL MATERIAL REFERENCES		
	Audio-Visuals	Textbooks	Student Materials
C-27 Installing dormers	Prentice-Hall: "Roofing" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Durbahn	
C-28 Installing flashing	Prentice-Hall: "Roofing" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Durbahn	
C-29 Installing drywall	Dorsett (ST); DCA: "Building Construction Interior" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner	Georgia: Unit DI-1
C-30 Filling nail holes, taping and floating	Dorsett (ST); DCA: "Building Construction Interior" (ST)	Wagner; Feirer and Hutchings	Georgia: Units DI-2; DI-3
C-31 Hanging wallpaper		Wagner	Georgia: Unit DI-6
C-32 Painting drywall		Wagner	Georgia: Unit DI-5
C-33 Stippling drywall	Dorsett (ST)	Wagner; Douglas and Werner	Georgia: Unit DI-4
C-34 Installing crown molding	Dorsett (ST); Audio Active (T); DCA: "Building Construction Interior" (ST)	Douglas and Werner; Feirer and Hutchings; Wagner	Georgia: Unit IIT-3

CURRICULUM AREA: CARPENTRY/CABINET MAKING

TASK LISTING	INSTRUCTIONAL MATERIAL REFERENCES		
	Audio-Visuals	Textbooks	Student Materials
C-35 Installing interior plywood paneling	Dorsett (ST); DCA: "Building Construction Interior" (ST)	Wagner; Feirer and Hutchings; Rebaud	Georgia: Unit PAN-1
C-36 Installing a pre-hung door	Audio Active (T); Dorsett (ST)	Wagner; Feirer and Hutchings	Georgia: Unit WD-1
C-37 Installing a door lock set		Wagner; Feirer and Hutchings	Georgia: Unit WD-2
C-38 Installing a pre-hung window	Audio Active (T); Dorsett (ST); Prentice-Hall: "Completing the Exterior" (ST)	Wagner; Feirer and Hutchings	Georgia: Unit WD-3
C-39 Trimming out a window	Dorsett (ST); DCA: "Building Construction Interior" (ST)	Wagner; Rebaud	Georgia: Unit IIT-1
C-40 Installing base molding	Dorsett (ST); DCA: "Building Construction Interior" (ST)	Douglas and Werner; Feirer and Hutchings; Wagner	Georgia: Unit IIT-2
C-41 Installing sliding and folding interior doors	Prentice-Hall: "Completing the Interior" (ST)	Douglas and Werner; Feirer and Hutchings; Rebaud; Wagner; Durbahn	
C-42 Installing insulation materials	Prentice-Hall: "Completing the Interior" (ST)	Douglas and Werner: Feirer and Hutchings; Rebaud; Wagner; Durbahn	

CURRICULUM AREA: CARPENTRY/CABINET MAKING

TASK LISTING	INSTRUCTIONAL MATERIAL REFERENCES		
	Audio-Visuals	Textbooks	Student Materials
CM-01 Using hand tools	Bergwall: "Woodworking: Hand Tools Explained" (FS)	Lewis; McDonnel: Dahl and Wilson; Groveman and Glazner; Jones	---
CM-02 Using measuring tools	---	Dahl and Wilson; Lewis; McDonnell	---
CM-03 Using fasteners	Stanley Tools (FS)	Dahl and Wilson; Lewis	---
CM-04 Using portable power tools	Career Aids: "Using Portable Power Tools" (FS); Bergwall: "Woodworking Explained: Building a Better Bookshelf" (FS); Prentice Hall: "Woodworking: Power Tools" (FS)	Dahl and Wilson; Lewis; Jones; Drake	---
CM-05 Surfacing stock, jointing edges and dressing lumber to thickness	Career Aids: "Woodworking Machine Operations Explained" (FS); Prentice-Hall: "Woodworking: Power Tools" (FS)	Lewis; Dahl and Wilson; Jones	---

CURRICULUM AREA: CARPENTRY/CABINET MAKING

TASK LISTING		INSTRUCTIONAL MATERIAL REFERENCES		
		Audio-Visuals	Textbooks	Student Materials
CM-17	Building drawers for cabinets	---	Dahl; Lewis	---
CM-18	Building doors for cabinets	---	Dahl; Lewis	---
CM-19	Applying hardware for kitchen cabinet drawers and doors	---	Lewis; Groveman and Glazner; Jones	---
CM-20	Applying laminated plastic to top of kitchen cabinet	Career Aids: "Woodworking: Finishing" (FS)	Lewis; Groveman and Glazner	---
CM-21	Making cut-outs for appliances in kitchen cabinet top	Bergwall: "Woodworking: Machine Operations Explained" (FS)	---	---
CM-22	Preparing cabinet for finishing	Prentice-Hall: "Woodworking: Finishing (FS): Bergwall: Building a Better Bookshelf" (FS)	Groveman and Glazner	---
CM-23	Installing cabinets	Prentice-Hall: "Completing the Interior" (FS)	Lewis	---

CURRICULUM AREA: CARPENTRY/CABINET MAKING

TASK LISTING	INSTRUCTIONAL MATERIAL REFERENCES		
	Audio-Visuals	Textbooks	Student Materials
CM-06 Ripping stock	Bergwall: "Woodworking: Machine Operations Explained"; Prentice-Hall: "Woodworking: Power Tools" (FS) "Woodworking: Power Saws" (FS)	Lewis: Groneman and Glazner	---
CM-07 Cutting stock to length	"	Lewis: Dahl and Wilson	---
CM-08 Cutting material	"	Lewis	---
CM-09 Shaping to pattern	"	Lewis	---
CM-10 Making wood joints	---	Lewis; Dahl and Wilson	---
CM-11 Turning stock - cylindrical and face plate turning	Bergwall	Lewis	---
CM-12 Boring holes and cutting plugs	Bergwall	Lewis	---
CM-13 Sanding flat surfaces	Bergwall	Lewis	---
CM-14 Billing out and sketching parts for kitchen cabinet	---	Lewis	---
CM-15 Building the main body of a standard sized kitchen cabinet	Dahl and Wilson	Dahl and Wilson; Lewis; Ramsey and Sluper	---
CM-16 Building face plates	---	Dahl; Lewis	---

TEXTBOOK LIST

Capotosoto, J., Basic Carpentry (2nd ed.). Tarrytown, NY: Prentice-Hall, 1980.

Dahl, A. and Wilson, J.D., Cabinet Making and Millwork. American Tech, 1956.

DeCristoforo, R.J., Woodworking Techniques: Joints and Their Applications. Prentice-Hall, 1974.

Drake, G., Everyone's Book of Hand and Small Powered Tools. Prentice-Hall, 1974.

Durbahn, W.E. and Putnam, R.E., Fundamentals of Carpentry I: Tools. Materials and Practices. Chicago, IL: American Tech.

Durbahn, W.E. and Putnam, R.E., Fundamentals of Carpentry II: Practical Construction. Chicago, IL: American Tech.

Feiver, J.L. and Hutchings,G.R., Carpentry and Building Construction. Bennett Books, 1976.

Groneman, C.H. and Glazener, E.R., Technical Woodworking. Gregg/McGraw-Hill, 1976.

Jones, P., Basic Cabinetmaking. Prentice-Hall, 1979.

Lewis, G.J., Safety for Carpenters and Woodworkers. Delmar, 1980.

McDonall, L.P. and Kaumeheiwa, A.I., The Use of Hand Woodworking Tools.

McDonall, L.P. and Kaumeheiwa, A.I., The Use of Portable Hand Tools.

Wagner, W.H., Modern Carpentry. South Holland, IL: Good-Heart-Willcox, 1979.

AUDIO VISUALS

Audio Active	Tapes
Bergwall	Sound filmstrips
Career Aids, Inc.	Sound filmstrips
Dorsett	Sound filmstrips
Prentice-Hall	Sound filmstrips

INSTRUCTIONAL UNITS

Instructional units listed in the Unit Guides section and on the Instructional Resource Matrix may be obtained from : University of Georgia, College of Education, Division of Vocational Education, Vocational Education Materials Center, Athens, Georgia, 30602.

ADDITIONAL INSTRUCTIONAL RESOURCES

Textbooks

Ball, J.E., Carpenters and Builders Library. (Vol. I-IV, 4th ed.) Audel, 1976.

Ball, J.E., Interior and Exterior Trim. NY: Delmar, 1975.

Ball, J., Light Construction Techniques: Foundations to Finish. Prentice-Hall, 1980.

Badzinski, S., Stair Layout. Chicago: American Tech.

Capotosto, J., Furniture Making and Finishing. Prentice-Hall, 1979.

Complete Building Construction. Audel, 1979.

Cunningham, B. M. & Holtrop, W.F., Woodshop Tool Maintenance. Bennett.

Douglas, J.H., Projects in Wood Furniture. McKnight.

Douglass, Penny, Roberts and Polette, Units in Woodworking. Delmar, 1973.

Drake, G., Weatherizing Your Home. Prentice-Hall, 1978.

Feirer, J.L., Woodworking for Industry. Bennett.

Feirer, J.L., Basic Woodworking. Bennett.

Feirer, J.L., Bench Woodwork. Bennett.

Feirer, J.L., Cabinetmaking and Millwork. Bennett, 1970.

Feirer, J.L., Wood: Materials and Processes. Bennett.

Feirer, J.L., Woodworking for Industry. Bennett.

Fryklund, V.C. and LaBerg, A.J., General Shop Woodworking. (7th ed.). McKnight.

Hammond, J.J. et al., Woodworking Technology. (4th ed.). McKnight.

Jeffrey, H.R., Wood Finishing. Bennett.

Jones, R.P., Construction Estimating. NY: Delmar.

Jones, R.P., Framing Sheathing and Insulation. NY: Delmar, 1973.

Kleuke, W.W., The Art of Wood Turning. Bennett.

Maguire, B., Carpentry in Commercial Construction. Prentice-Hall, 1976.

McDonnell, L.P. and Kaumeheiwa, A.I., The Use of Hand Woodworking Tools. Delmar, 1978.

McDonnell, L.P. and Kaumeheiwa, A.I., The Use of Portable Power Tools. Delmar, 1979.

McGinnis, H. and Ruley, M.J., Basic Woodwork Projects. McKnight.

Newell, A.C. and Holtrop, W.F., Coloring, Finishing and Painting Wood. Bennett.

Nichols, T. and Stiles, H., Woodworking Workbook. Bennett.

Rebhorn, E., Wood Turning. McKnight.

Smith, R.E., Machine Woodworking (3rd ed.). McKnight.

Soderberg, G.A., Finishing Technology (3rd ed.). McKnight.

Ulrey, H.F., Carpentry and Building. Audel, 1966.

Van Orman, H.A., Estimating for Residential Construction. NY: Delmar, 1978.

Wagner, W.H., Modern Woodworking. Goodheart-Willcox.

Wass, A. and Sanders, G.A., Materials and Procedures for Residential Construction. Prentice-Hall, 1981.

Watson, J., Roofing Systems: Materials and Application. Prentice-Hall, 1979.

Wilson, J.D. and Werner, S.O., Simplified Stair Layout (2nd ed.). Delmar, 1973.

Audio Visuals

Automated Training, Inc.	Sound filmstrips 16 mm snap-in cartridge
Bobbs-Merrill	Slides/tapes
Classroom Film Distributors, Inc.	16 mm films
Colonial Films	16 mm films Sound filmstrips

Cornell University	Motion pictures
Daystar Audio Visual	Sound filmstrips
DCA Educational Products	Sound filmstrips
Encyclopedia Britannica Education Corp.	Sound filmstrips
Eye Gate House, Inc.	Sound filmstrips
Hobar Publications	Transparencies
Instructional Materials Laboratory, University of Missouri	Slides/tapes
Minnesota Mining and Manufacturing Co.	Transparencies
National Film Board of Canada	Sound filmstrips
Robert Brady Co.	Sound filmstrips
Society for Visual Education, Inc.	Sound filmstrips
Sterling Educational Films	16 mm films
U.S. Department of Agriculture	Sound filmstrips
U.S. National Audiovisual Center	16 mm films
Universal Education and Visual Arts	Motion cartridges
University of Illinois	Sound filmstrips
University of Illinois Vocational/Agriculture Service	Sound filmstrips
Vocational Education Media Center, Clemson University	Transparencies

Individualized Instruction

Instructional Materials Laboratory, University of Missouri, Columbia	Study Guides

Mid-America Vocational Curriculum Consortium	Instructional Units
Oklahoma State Department of Vocational and Technical Education	Instructional Units

Curriculum

Bibliography of Vocational Education Resource Materials. Madison, WI: University of Wisconsin, Wisconsin Vocational Studies Center, 1979.

Curriculum Guide to Carpentry Units. Augusta, ME: Maine Department of Education, Bureau of Vocational Education, 1970.

Giuliano, R.M., *The Framing Square*. New Brunswick, NJ: Vocational-Technical Curriculum Laboratory, Rutgers, 1962.

RESOURCE ADDRESSES

American Tech
5608 Stony Island Avenue
Chicago, IL 60637

Audio Active, Inc.
Jonesboro, AR 72401

Automated Training, Inc.
Box 34707
Charlotte, NC 28234

Bergwall Productions, Inc.
839 Stewart Avenue
Garden City, NY 11530

Bobbs-Merrill Educational
Publishing
4300 West 62nd Street
P. O. Box 7080
Indianapolis, IN 46206

Brick Institute of America
Region Nine Office
100 Northcreek-Suite 280
Atlanta, GA 30327

California State Department
of Education
Bureau of Industrial Education
721 Capitol Mall
Sacramento, CA 95814

Career Aids, Inc.
8950 Lurline Avenue, Dept. T7
Chatsworth, CA 91311

Charles A. Bennett Co., Inc.
809 West Detweiller Drive
Peoria, IL 61615

Classroom Film Distributors,
Inc.
5610 Hollywood Blvd.
Los Angeles, CA 90028

Colonial Films
752 Spring Street, N.W.
Atlanta, GA 30308

Daystar Audio Visual
3 Inverness Drive East
Englewood, CO 80112

DCA Educational Products, Inc.
Subsidiary of Display
Corporation of America
424 Valley Road
Warrington, PA 18976

Delmar Publishers
50 Wolf Road
Albany, NY 12205

Department of Industrial
Education
University of Maryland
College Park, MD 20742

Dorsett Educational Systems,
Inc.
P.O. Box 1226
Norman, OK 73070

Encyclopedia Britannica
Educational Corporation
425 N. Michigan Avenue
Chicago, IL 60611

Eye Gate House, Inc.
146-01 Archer Avenue
Jamaica, NY 11435

Garden Way Publishing
Charlotte, VT 05445

Goodheart-Willcox Co., Inc.
123 W. Taft Drive
South Holland, IL 60473

Headquarters
Department of the Army
Washington, DC

Hobar Publications
1234 Tiller Lane
St. Paul, MN 55112

Instructional Materials
Laboratory
10 Industrial Education
Building
University of Missouri-
Columbia
Columbia, MO 65211

McKnight Publishing Co.
Box 2854
Bloomington, IL 61701

Mid-America Vocational
Curriculum Consortium
1515 West Sixth Avenue
Stillwater, OK

Minnesota Mining and
Manufacturing Co.
Medical Film Laboratory
3 M Center
St. Paul, MN 55101

National Film Board of Canada
1251 Avenue of the Americas
New York, NY 10020

National Fire Protection
Association
470 Atlantic Avenue
Boston, MA 02210

Nebraska Department of
Education
Division of Vocational
Education
2333 S. Tenth Street
Lincoln, NE 68508

New York State Education Dept.
Bureau of Secondary Curriculum
Development
Albany, NY 12224

Oklahoma State Department of
Vocational and Technical
Education
1515 W. Sixth Street
Stillwater, OK 74074

Prentice-Hall Media
Serv Code XF
150 White Plains Road
Tarrytown, NY 10591

Robert Brady Co.
150 White Plains Road
Tarrytown, NY 10591

RMI Film Productions
701 Westport Rd.
Kansas City, MO 64111

Sanford Research Project
Sanford, NC 27330

Society for Visual Education,
Inc.
Division of Singer Co.
1345 Diversey Parkway
Chicago, IL 60614

Sterling Educational Films
241 E 34th Street
New York, NY 10016

Superintendent of Documents
U. S. Government Printing
Office
Washington, DC 20402

Universal Education and
Visual Arts
100 Universal City Plaza
Universal City, CA 91608

University of Georgia
College of Education
Division of Vocational Education
Vocational Education Materials
Center
Green Street
Athens, GA 30602

University of Illinois
Visual Aids Service
1325 S. Oak
Champaign, IL 61820

University of Illinois
Vocational Agriculture Service
434 Mumford Hall
Urbana, IL 61801

University of Texas
Division of Extension
Instructional Materials Service
Austin, TX

U. S. Department of Agriculture
Motion Pictures Service
Room 1850, South Building
Washington, DC 20250

U. S. Department of Labor
Bureau of Apprenticeship
and Training
Washington, DC 20210

U. S. National Audiovisual
Center
General Services Administration
Washington, DC 20409

Vocational Education Media
Center
Clemson University
Clemson, SC 29631

Vocational-Technical
Curriculum Laboratory
Rutgers University
Building 4103
Kilmer Campus
New Brunswick, NY 08903

Wisconsin Vocational Studies
Center
University of Wisconsin-
Madison
964 Education Sciences Bldg.
1025 W. Johnson St.
Madison, WI 53706

SECTION VII

STUDENT RECORDS

STUDENT RECORDS

This section contains three forms, the Individual Progress Report Chart, the Group Progress Chart and the Student Competency Record. The use of these charts is described below.

INDIVIDUAL PROGRESS REPORT. One copy should be kept in each student's confidential file and updated as tasks are completed. Grades should be assigned upon task completion and then averaged for grade reporting. Difficulty, excessive amounts of time, etc. should be noted on this form and should be discussed with the student.

GROUP PROGRESS CHART. This chart reflects task completion only and can be displayed in the classroom or lab area. Due to confidentiality of records, a grade must not be recorded. The instructor should maintain a copy of this record and update it daily.

STUDENT COMPETENCY RECORD. This record provides a listing of all tasks or units in the program, a space designated for the student's name, D.O.T. numbers and job title and a check off column for date of task completion. The D.O.T. number and job title should be filled in when the student leaves the program for any reason. The information will indicate his/her qualifications for a job. This information will be especially useful to early leavers who have not completed the total program. The Task Listing/D.O.T. Code Cross Reference Table in Section III contains the information required to identify the particular job title for which the student is qualified.

The following is a list of tasks which will enable a student to meet the requirements for the identified occupation.

Roofer (860.381-010)	Carpenter Helper (860.664-014)	Rough Carpenter (860.381-042)
C-01 C-17 thru C-22	C-01 C-16 C-32	C-01 thru C-14 C-15 thru C-26 C-29 thru C-30 C-32 thru C-33

Carpenter II (860.861-010)	Cabinet Maker (860.280-010)	Cabinet Maker Apprentice (860.280-014)
C-01 thru C-18 C-21 thru C-26 C-29 thru C-42	CM-01 thru CM-23	CM-01 thru CM-13 CM-15 thru CM-19 CM-22

Cabinet Finisher	Cabinet Installer
CM-01 thru CM-04 CM-13 CM-19 thru CM-24	CM-01 thru CM-04 CM-13 CM-19 thru CM-23

INDIVIDUAL PROGRESS REPORT

NAME ____________________________

PROGRAM/ CLUSTER ____________________________ AREA ____________________________

TASK/ UNIT NO.	UNIT TITLE	DATE STARTED	DATE COMP.	EST. TIME	GRADE

GROUP PROGRESS CHART

NAME	UNITS/TASKS																				

RECORD OF DEMONSTRATED JOB COMPETENCIES

STUDENT NAME ______________________ PROGRAM ______________________

DICTIONARY OF OCCUPATIONAL TITLES JOB CLASSIFICATION: D.O.T. No. ______________________

JOB TITLE ______________________

Unit No.	Competency Demonstrated	Initial Date
	Measurement and Layout	
C-01	Reading a Rule	
	Blueprint Reading	
C-02	Reading a Scale	
C-03	Orthographic Drawings	
C-04	Elevation Drawings	
C-05	Symbols for Blueprints	
C-06	Structural Information	
C-07	Plot Plans	
	Selecting and Using Hand and Power Tools, Construction Materials and Fastening Devices	
C-08	Building a Sawhorse	
	Laying Out and Constructing a Floor System	
C-09	Installing Sills and Floor Joists	
C-10	Installing Floor Decking	
	Installing Walls and Frames	
C-11	Laying Out, Sawing and Assembling Exterior Wall Frame	
C-12	Laying Out, Sawing and Framing Doors and Windows	
C-13	Laying Out, Cutting and Installing Weatherboard	
C-14	Laying Out and Framing a Stairwell Opening	
C-15	Constructing Stairs	
	Installing Ceiling Systems	
C-16	Cutting and Installing Ceiling Joists	
	Building and Installing Roofing Systems	
C-17	Identifying Parts of a Roof	
C-18	Laying Out, Cutting and Erecting Common Rafters as Required to Build a Gable Roof	
C-19	Installing a Gambrel Roof	
C-20	Installing a Hip Roof	
C-21	Installing Roof Decking and Applying Felt Underlayment	
C-22	Laying Out Asphalt Composition Shingles	
C-23	Framing a Roof Opening for a Chimney	
C-24	Building a Porch Cornice	
C-25	Building a Projected Box Cornice (for Brick Veneer Construction)	
C-26	Building a Closed Box Cornice	
C-27	Installing Dormers	

Unit No.	Competency Demonstrated	Initial Date
C-28	Installing Flashing, Roof Caps and Vents	
	Installing Interior Trim	
C-29	Installing Dry Wall	
C-30	Filling Nail Holes, Taping and Floating	
C-31	Hanging Wallpaper	
C-32	Painting Drywall	
C-33	Stippling Drywall	
C-34	Installing Crown Molding	
C-35	Installing Interior Plywood Paneling	
C-36	Installing a Pre-Hung Door (Interior and Exterior)	
C-37	Installing a Door Lock Set	
C-38	Installing a Pre-Hung Window	
C-39	Trimming Out a Window	
C-40	Installing Base Molding	
C-41	Installing Sliding and Folding Interior Doors	
	Installing Insulation	
C-42	Installing Insulation Materials	
	Using Basic Tools	
CM-01	Using Hand Tools (Tooth Cutting Tools, Edge Cutting Tools, Boring Tools, Assembly Tools, Smoothing Tools)	
CM-02	Using Measuring Tools	
CM-03	Using Fasteners (Nails and Brads, Screws and Glue)	
CM-04	Using Portable Power Tools (Circular Saw, Saber Saw, Electric Drill, Electric Router, Belt Sander and Finishing Sander)	
	Using Stationary Equipment for Basic Operations	
CM-05	Surfacing Stock, Joining Edges and Dressing to Thickness (Joiner and Planer)	
CM-06	Ripping Stock - Lumber or Plywood (Table-Saw)	
CM-07	Cutting Stock to Length (Radial Arm Saw)	
CM-08	Cutting Material (Band Saw and Scroll Saw)	
CM-09	Shaping to Pattern (Shaper)	
CM-10	Making Wood Joints	
CM-11	Turning Stock - Cylindrical and Face Plate (Wood Lathe)	
CM-12	Boring Holes and Cutting Plugs (Drill Press)	

Unit No.	Competency Demonstrated	Initial Date	Unit No.	Competency Demonstrated	Initial Date
CM-13	Sanding Flat Surfaces (Belt and Disk Sanding Machines)		CM-18	Building Doors for Kitchen Cabinets	
	Building Cabinets		CM-19	Applying Cabinet Hardware for Kitchen Cabinets (Doors and Drawers)	
CM-14	Billing Out and Sketching Parts for a Kitchen Cabinet		CM-20	Applying Laminated Plastic to Top of Kitchen Cabinet	
CM-15	Building the Main Body of a Kitchen Cabinet		CM-21	Making Cut-Outs for Appliances	
CM-16	Building Face Plates for a Kitchen Cabinet		CM-22	Preparing (Sanding) Cabinet for Finishing	
CM-17	Building Drawers for Kitchen Cabinets		CM-23	Installing Cabinets	

This is to certify that the above named student has demonstrated proficiency in the performance of the competencies and/or tasks indicated above. These competencies and/or tasks have been determined to be the skills and knowledge that are necessary for entry level employment into the job classification indicated.

Date ____________________ Instructor ______________________________

School ______________________________

SECTION VIII

SPECIAL NEEDS STUDENT

WORKING WITH SPECIAL NEEDS STUDENTS

Introduction

Special needs students are those who are designated as handicapped and/or disadvantaged. The 1976 vocational education amendment defines handicapped individuals as:

> Persons who are mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired, health impaired, or persons with other specific disabilities, who by reason thereof require special education and related services and who cannot succeed in the regular vocational education programs.

In Title II of the 1976 education amendments disadvantaged persons are defined as:

> Persons (other than handicapped persons) who have academic or economic disadvantages and who require special services, assistance or programs in order to enable them to succeed in vocational education programs.

Federal legislation requires that these special people be given an opportunity to function in a regular classroom. This section provides information on how special needs students are identified and how they can be mainstreamed into regular educational environments.

Figure One presents a model depicting various activities of the process in identifying and mainstreaming special needs students. These activities are conducted at three levels: the system level, the school level and the classroom level. All three levels must work together if implementation of the process is to be effective.

Identification Of The Special Needs Student

Through a variety of pre-testing procedures, special needs students are identified and their potentials are evaluated at the

SPECIAL NEEDS MAINSTREAMING MODEL

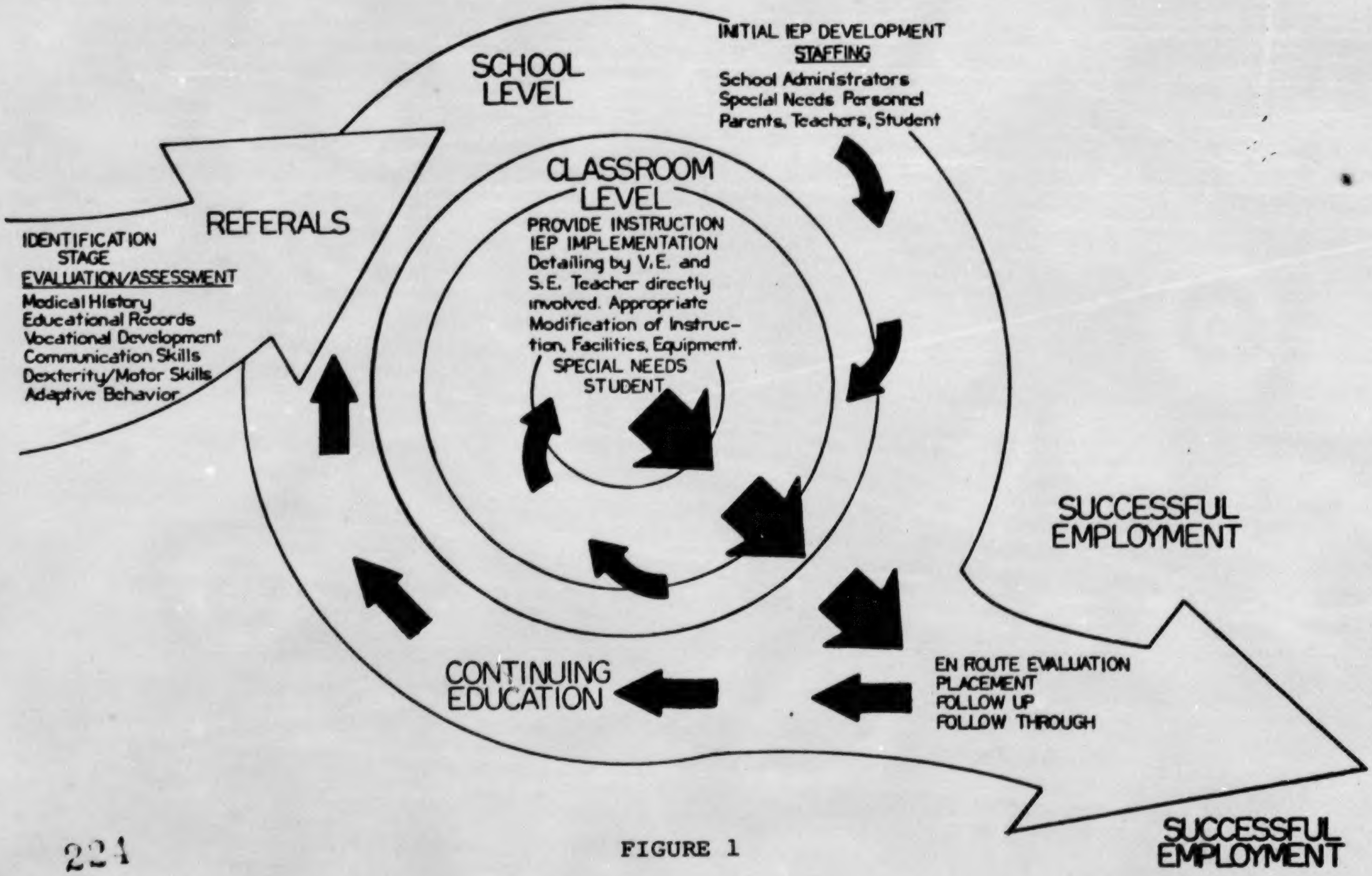

SCHOOL LEVEL
INITIAL IEP DEVELOPMENT
STAFFING
School Administrators
Special Needs Personnel
Parents, Teachers, Student
CLASSROOM LEVEL
PROVIDE INSTRUCTION
IEP IMPLEMENTATION
Detailing by V.E. and S.E. Teacher directly involved. Appropriate Modification of Instruction, Facilities, Equipment.
SPECIAL NEEDS STUDENT
REFERALS
IDENTIFICATION STAGE
EVALUATION/ASSESSMENT
Medical History
Educational Records
Vocational Development
Communication Skills
Dexterity/Motor Skills
Adaptive Behavior
SUCCESSFUL EMPLOYMENT
EN ROUTE EVALUATION
PLACEMENT
FOLLOW UP
FOLLOW THROUGH
CONTINUING EDUCATION
SUCCESSFUL EMPLOYMENT

FIGURE 1

system level. This evaluation process consists of collecting and assessing the following data for each student:

- -Medical History
- -Educational Records
- -Vocational Development
- -Communication Skills
- -Dexterity/Motor Skills
- -Adaptive Behavior

When this procedure has been completed, the system personnel refers the student to the appropriate school level personnel.

Development of the Plan

At the school level, an Individual Education Plan (IEP) is developed for each special needs student. An IEP is a written plan which describes the educational objectives, both long and short term, and the support services for a special needs student. The plan is developed by the school administration, special education personnel, teacher(s) directly involved with the student and the parent(s). In some cases, the student may help with the development.

Implementing the I.E.P.

The actual implementing of the I.E.P. begins at the classroom level. The purpose of the teacher dealing with the special needs student is to help the student set realistic goals, identify the barriers which make it difficult for the student to learn and adapt the curriculum and/or facilities with reference to the I.E.P. so the student can learn while overcoming personal barriers.

Special needs students have problems which hinder their learning. Therefore, a teacher's job becomes more complicated than when teaching "regular" students. Handicapped students may have a variety of problems - mental, physical and/or emotional.

Academically disadvantaged students may exhibit language deficiencies, reading and writing deficiencies, computational deficiencies and general educational deficiencies. Economically disadvantaged students may possess an inability to concentrate because their primary needs - food, shelter, clothing - are not adequately met due to lack of money.

By considering these problems, teachers can modify existing programs to accommodate the needs of special needs learners. Some suggestions which may prove beneficial in modifying an existing curriculum are listed below:

- Prepare instructional materials in greater detail and assign work in shorter units.
- Provide more frequent evaluation of student's progress and provide opportunities for remedial work.
- Be aware of the student's limited vocabulary.
- Be aware of the student's inability to understand abstractions and generalizations and prepare materials accordingly.
- Keep the student aware of his or her progress and make the student feel he or she can succeed.
- Use real teaching aids, live work and practical experiences whenever possible.
- Choose reading material which is at the student's level, interest and experience.
- Use constructive criticism only.
- Use peer instruction whenever possible.
- Allow the student to advance at his or her own pace.
- Use the part-to-whole learning concept in adapting materials.

Materials Which Can Be Used to Teach Disadvantaged

In Georgia an effective set of materials has been developed to be used with a program to help disadvantaged students adjust to life and work situations. This program is called CVAE or Coordinated Vocational Academic Education. The CVAE program is organized with a coordinator who is responsible for the type of instruction the students receive, and a team of teachers assigned to the coordinator who work cooperatively to help the disadvantaged students learn to enjoy school and become more successful students. CVAE materials include visuals in the form of synchronized slide/tape presentations. These units are designed to help the disadvantaged student become more successful in school, learn good work habits, become an aware consumer, and develop a better self-image and appearance. (Although designed especially for disadvantaged students, CVAE may also be used in regular classroom situations). The vocational education teacher should work with the CVAE coordinator to design a program of study for the disadvantaged students in areas in which the student needs help.

In some cases, facilities, must be modified for handicapped special needs students. In general, as long as the classroom/shop meets federal guidelines for barrier free design, extensive facility changes need not be made. For visually impaired students, for example, let the student locate in the classroom where he or she can see best even to the point of moving the desk or work station as a portable unit. In the case of orthopedically handicapped, some changes may have to be made to shop machinery to allow the student to use it. This may involve more convenient controls or special seating where the student would normally stand. In making these changes, special education expertise would be helpful.

Evaluation

Evaluation of the student's program should consist of:

- En-route evaluation (formative) to monitor the student's progress through the program.
- Summative evaluation upon completion of the program to determine job readiness.
- Follow-up after placement to determine if the student is successful on the job.
- Follow-through activities designed to identify any further training needed, which is indicated by the follow-up procedure.

Working with special needs students is much more demanding of the system, the school and the classroom teacher. However, with their patience and understanding, special needs students can not only succeed, but in many cases excell.

RESOURCES

To aid the teacher in modifying materials for special needs categories, the following references are listed by category. These are suggested references only as a world of materials exist on this subject.

Mentally Retarded

A Curriculum Guide for Teachers of Educable Mentally Retarded. Danville, Ill.: The Interstate Printers and Publishing Co., Inc.

High, Elizabeth C., and Moyers, Kathy L. *Training Manual: Developing Pre-Vocational/Vocational Skills in Developmentally Disabled Persons.* Washington, D.C.: Job Development Laboratory, George Washington University, 1976.

Kolstoe, Oliver P. *Teaching Educable Mentally Retarded Children.* Holt, Rinehart and Winston, 1976.

Mulligan, Robert E.; Gavin, Donald and Conaley, James. *Comprehensive Career Education Curriculum Guide for the Trainable.* New Brunswick, N.J.: Rutgers Vocational-Technical Curriculum Laboratory, 1977.

Introduction to Vocations for Educable Mentally Retarded. New Jersey: New Jersey Department of Education.

State of Ohio Curriculum Guide for Moderately Retarded Learners. Columbus, Ohio: Ohio Department of Education, 1977.

Tucker, Mark M. *Learning through Curriculum Modification; A Blueprint to Teaching the Mentally Retarded.* Johnstown, PA.: Mafex Associates, Inc., 1976.

Watson, Marjorie. *Mainstreaming the Educable Mentally Retarded.* Washington, D.C., NEA, 1975.

Hearing Impaired

Alvin, Howard P. *The Evolution of an Evaluation Design for Evaluating Secondary Programs for the Deaf in Vocational Occupational-Technical Education (VOTE) Programs.* ERIC - ED 123-241.

Guidelines: Educational Planning for the Hearing Handicapped. North Carolina Public Schools. Division for Exceptional Children, North Carolina Department of Public Instruction, Raleigh, N.C., 1977.

Munson, Harold L.; Eglston, Judy Cobb and Phillips, Gordon B. Career Education for Deaf Students: An Inservice Leader's Guide. University of Rochester, College of Education, Center for the Study of Helping Services, Rochester, N.Y. 1975.

Nix, Gary W. Mainstreaming Education for Hearing Impaired Children and Youth. Grune and Stratton, 1976.

Orthopedically and Other Health

A Model Plan for a Cooperative Vocational Rehabilitation Program. Office of Human Development, Rehabilitation Services and Administration. Department of Health, Education and Welfare, Washington, D.C.

Mallix, Kalisanker and Mueller, Jim. Vocational Aids and Enhanced Productivity of the Severely Disabled. The George Washington University Rehabilitation Research and Training Center, Washington, D.C. 1975.

McCarthy, Henry and Smart, Landon. Recommendations for Enhancing Employment Prospects of Handicapped Individuals. Comps. Human Resources Center, Albertson, L. I., 1978.

Duncan, John, et al. Environmental Modifications for the Visually Impaired: A Handbook. Visual Impairment and Blindness, December 1977, p. 442-455.

Disadvantaged

Guidelines for Methods and Techniques of Teaching Disadvantaged Students. Division of Vocational Education, Virginia Polytechnic Institute and State University, Blackburg, VA.

A Handbook for Developing Programs and Services for Disadvantaged Students. Department of Vocational Education Studies, College of Education, Southern Illinois, University of Carbondale, Carbondale, Ill. 62901

By Program

Adaption of Home Economics Curricula for Special Needs. North Dakota Research Coordination Unit, State Board for Vocational Education, State Office Building, Bismarck, ND.

Auto Body: An Adaptive and Developmental Program for Special Needs Students. Vocational-Technical Curriculum Laboratory, Rutgers - The State University, New Brunswick, N.J. 1976.

Floriculture Board of Cooperative Educational Services of Nassaw County, Division of Occupational Education, Division of Special Education, Westburg, NY 1975.

Grubb, Francine. *Basic Business* - A Teacher's Guide to an Employment Orientation Course for Special Needs Students. Vocational Technical Curriculum Laboratory, Rutgers - The State University, New Brunswick, N.J. 1976.

Home Economics and the Exceptional Student: A Handbook for Home Economics Teachers Working with Mentally Retarded Students. Vocational-Technical Curriculum Laboratory, Rutgers - The State University, New Brunswick, N.J. 1976.

Troutman, Carol M. *Introduction to Office Occupations*. Vocational-Technical Curriculum Laboratory, Rutgers - The State University, New Brunswick, N.J. 1974.

Working with the Handicapped in the Vocational Home Economics Classroom. Division of Vocational Education, State of Ohio, Columbus, Ohio.

Coordinated Vocational Education and Training (C.V.E.T.) manuals for disadvantaged, available from: Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1515 West Sixth Avenue, Stillwater, Oklahoma 74074.

-CVET Construction	3100219	Teacher's Guide
	3100209	Student
-CVET General Mechanics	3100239	Teacher's Guide
	3100229	Student

General Special Needs

A Handbook for Modifying Vocational Curricula for Handicapped Students. Wisconsin Vocational Studies Center, University of Wisconsin, Madison, May 1980.

Bottoms, J.E. and Scott, C.P. Supportive services for special student groups. In J.E. Wall (ed.), *Vocational Education for Special Groups*. Sixth Yearbook, Washington, D.C.: American Vocational Association, 1976.

Gill, Douglas H. and Scott, C. Paul. A practical model for mainstreaming handicapped learners in vocational education. *The Journal for Vocational Special Needs Education*, Vol. 1, No. 3, April, 1979, pp. 3-7.

Gugerty, J., et al. *Tools, Equipment and Machinery Adapted for the Vocational Educator and Employment of the Handicapped*. Project #498749006, Wisconsin Vocational Studies Center, Madison, Wisconsin, January 1981.

Hull, Marc E., Berry, Owen J. and Clark, Donald L. *Procedures for Teaching Vocational Concepts to Students with Special Needs*. Texas A & M University, Final Report Project 62350274, June 1976.

The Related Vocational Instruction Program. Georgia's Approach to Vocational Education for the Handicapped at the Secondary level, Douglas H. Gill, Project Coordinator, Vocational Programs for the Handicapped, Georgia Southern College, Statesboro, Georgia.

Vocational Educational Resource Materials, A Bibliography of Materials for Handicapped and Special Education. Third edition, 1978. Wisconsin Vocational Studies Center, University of Wisconsin - Madison.

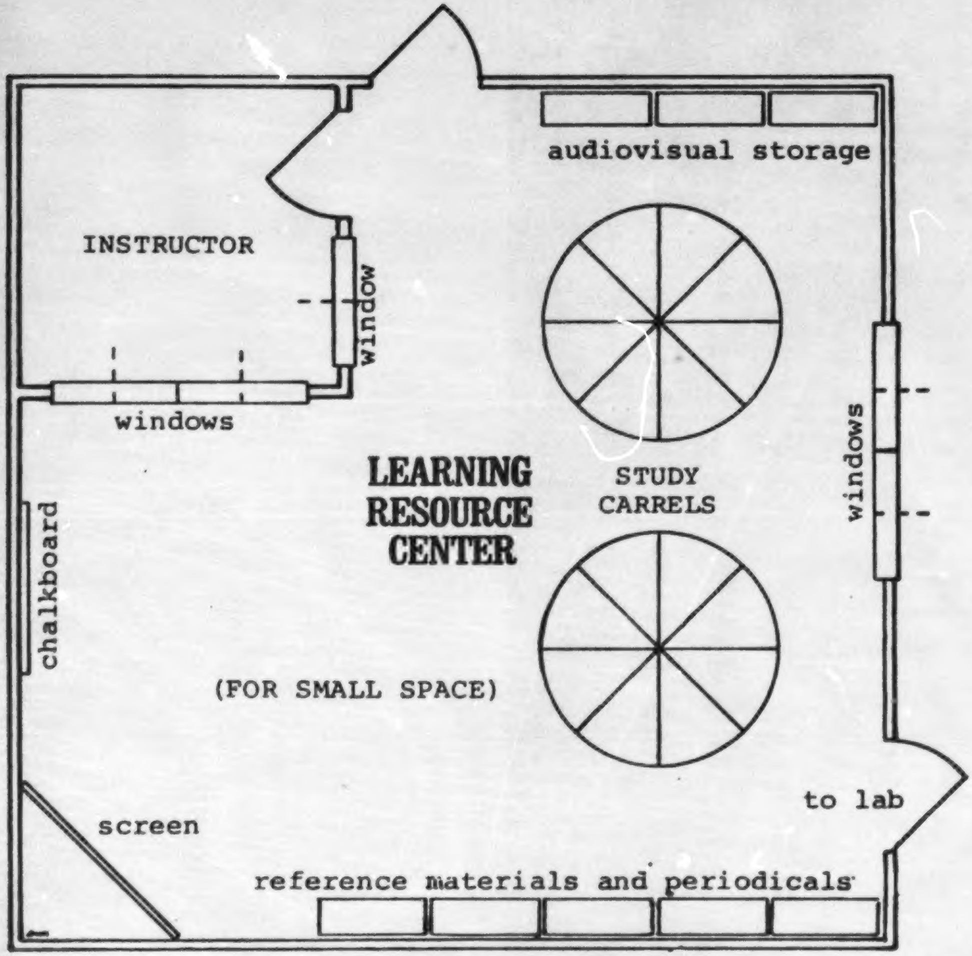
SECTION IX

FACILITY LAYOUT

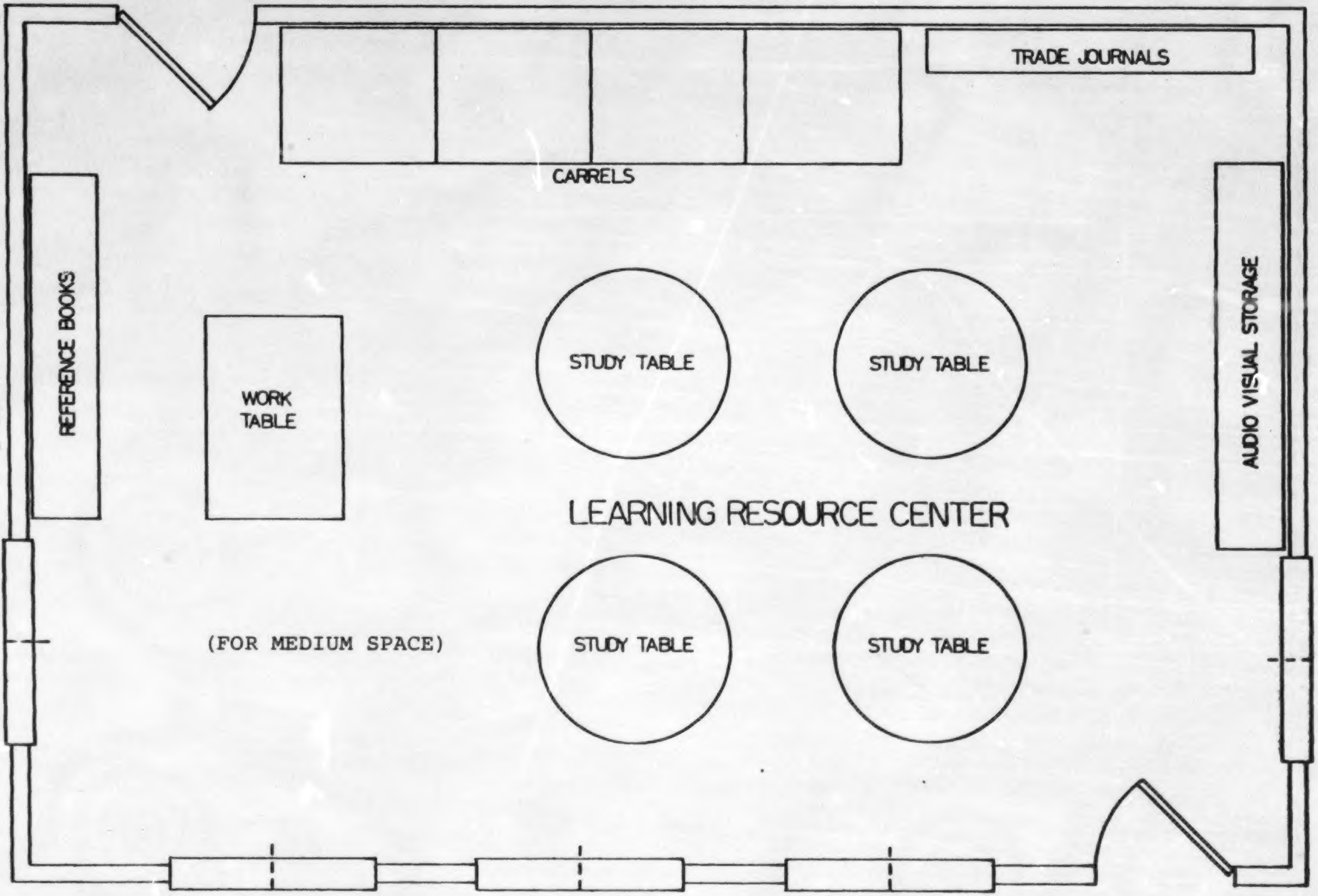
Facility Layout

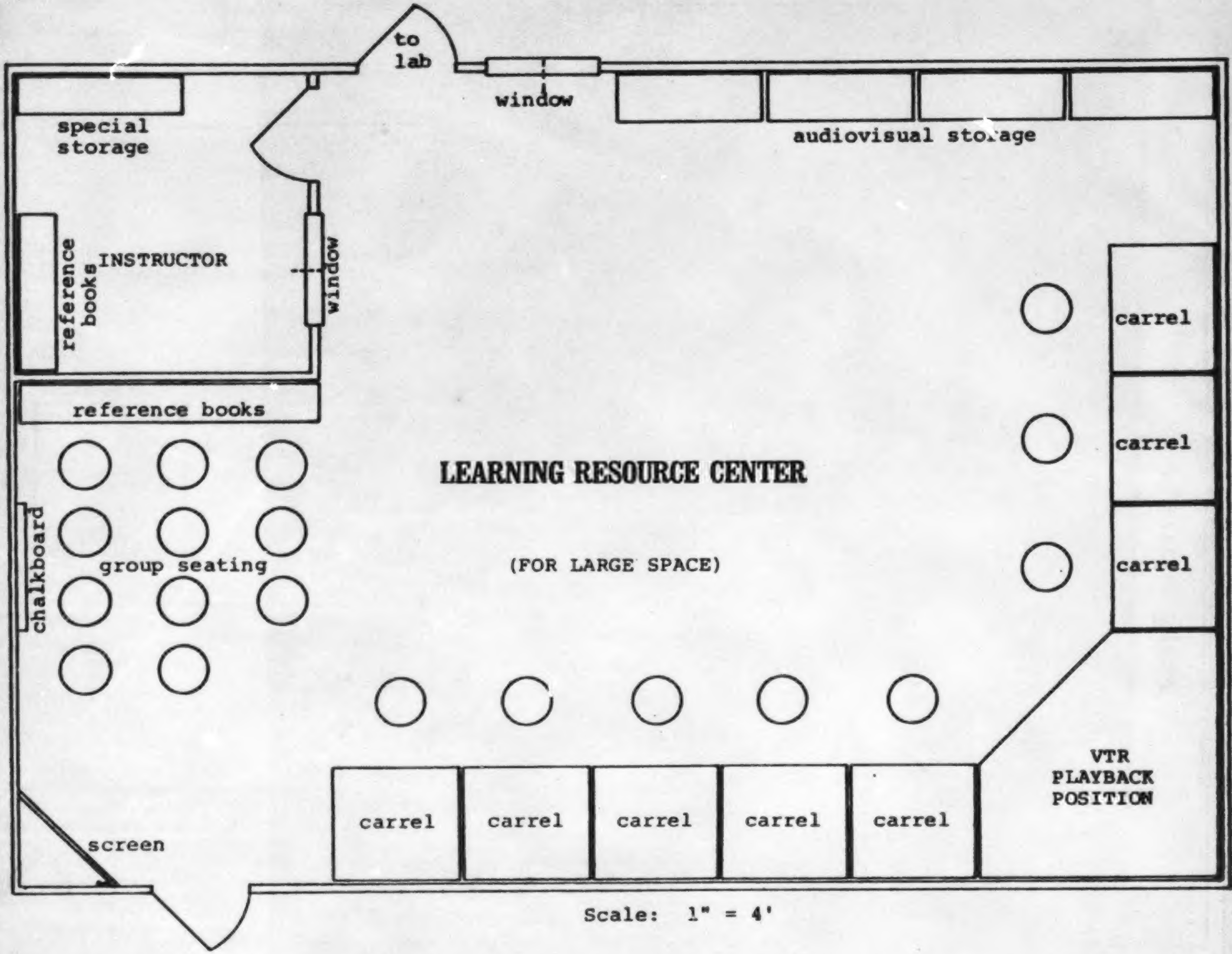
The facility layouts on the following pages are presented to aid in arranging the classroom and laboratory for efficient instruction. One facility layout and three resource center arrangements are presented. Ultimately, the instructor must determine the arrangement that best fits the needs of the students and the instructional method being used.

The laboratory facility layout is taken from a carpentry/ cabinet making program in Georgia. The facility is easily adaptable to a variety of arrangements that will best fit local needs. The layout may be especially useful in those schools where classroom renovation or construction is being planned.


audiovisual storage
INSTRUCTOR
window
windows
LEARNING
RESOURCE
CENTER
STUDY
CARRELS
windows
chalkboard
(FOR SMALL SPACE)
to lab
screen
reference materials and periodicals

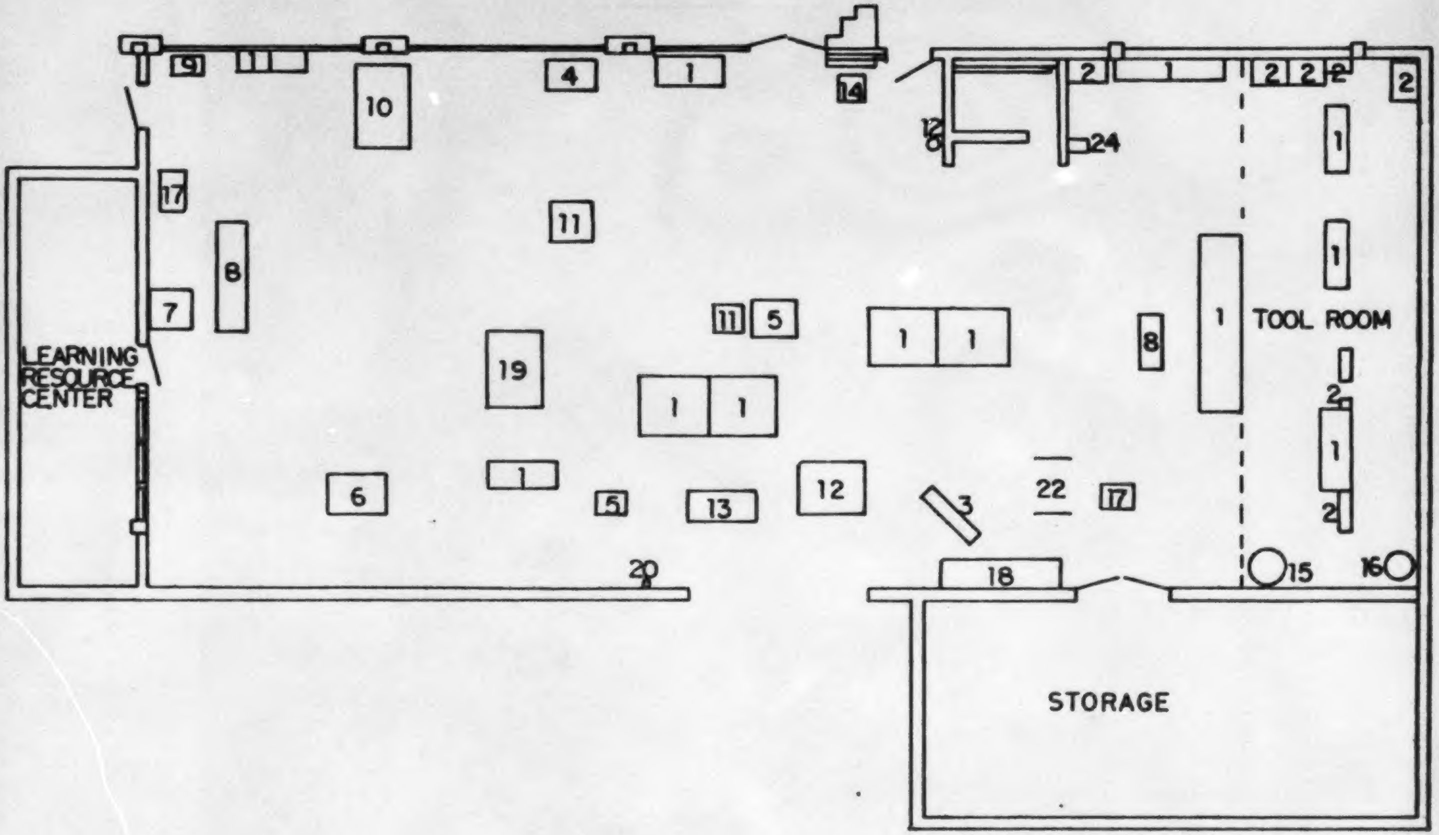
Scale: 1" = 4'


TRADE JOURNALS
CARRELS
REFERENCE BOOKS
WORK TABLE
STUDY TABLE
STUDY TABLE
AUDIO VISUAL STORAGE
LEARNING RESOURCE CENTER
(FOR MEDIUM SPACE)
STUDY TABLE
STUDY TABLE


to lab
window
special storage
audiovisual storage
INSTRUCTOR
reference books
window
reference books
LEARNING RESOURCE CENTER
(FOR LARGE SPACE)
chalkboard
group seating
carrel
carrel
carrel
VTR PLAYBACK POSITION
carrel
carrel
carrel
carrel
carrel
screen

Scale: 1" = 4'

CARPENTRY/CABINET MAKING LABORATORY


9
1
10
4
1
14
12
8
2
1
2
2
2
2
24
1
17
11
8
7
LEARNING RESOURCE CENTER
19
11
5
1
1
1
1
8
1
TOOL ROOM
1
2
1
2
6
1
5
13
12
3
22
17
20
18
15
16
STORAGE

CARPENTRY/CABINET MAKING LABORATORY

1	Work Tables
2	Storage Cabinets
3	Wood Lathe
4	Mortice Machine
5	Band Saw
6	Dewalt Saw
7	Dust Collector
8	Jointer
9	Grinder
10	Planer
11	Shaper
12	Tenon Machine
13	Electric Miter Saw
14	Drill Press
15	Nail Bin
16	Air Compressor
17	Sander Disk
18	Block-Belt Sander
19	Tilting Arbor Saw
20	Air Outlets
21	Fire Extinguisher
22	Over-arm Router
23	Tool Board
24	Metal Trash Can

SECTION X

DEFINITION OF TERMS

DEFINITION OF TERMS

1. AV's-Audiovisuals - May refer to any picture and/or sound media. (ie. slides, tapes, filmstrips, 16 mm films, etc.)

2. Checkpoint - A student-instructor interface point wherein the instructor may give the student a test, perform a demonstration, or simply provide the student with additional needed information or instructions. Also a checkpoint may be used for motivational purposes.

3. Competency - The ability (knowledge, skills and attitudes) to perform all of a group or cluster of related tasks required to complete a designated activity according to occupational standards. In the educational setting the statement of a competency includes expected student outcomes in terms of knowledge, skills, and attitudes required to complete a designated activity as defined by incumbent workers according to the standards of the work place.

4. Course - A grouping of tasks and competencies which have a common knowledge base or are within a given domain.

5. Criterion-Referenced Measure - An exercise based upon a performance objective, the accomplishment of which measures attainment of that objective.

6. Criterion-Referenced Test - A test designed to measure student competencies based on job or industrial standards.

7. Curriculum Guide - A document containing the objectives, content, organization, and structure of an instructional program. It is designed for use by administrators, instructional supervisors and teachers.

8. D.O.T. - Abbreviation for Dictionary of Occupational Titles. Document provides nine digit codes identifying each occupation.

9. Duty - One of the distinct major activities involved in the work performed, comprising related tasks.

10. Exit Point - A predetermined point within an instructional program in which a student may exit with the essential competencies for a specific job. Usually defined in terms of D.O.T. codes and/or O.E. codes.

11. "Hands-On" - Statement implying the student is physically involved in a learning activity.

12. Individualized Instruction (I.I.) - A system of instruction allowing for a student to progress at their fastest rate.

13. Job - A specific area of specialization within an occupational field consisting of several closely related duties for which a person would expect to receive remuneration. Should be identified by DOT code.

14. Job Sheet - (Or Operations Sheet) - A project of a performance nature. Generally performed by the student in a lab or shop type environment or in a specialized work area.

15. Live Work - Generally refers to items brought into the course area for repair or adjustment. Examples of live work might be automobiles, radios and TV's, air-conditioners, etc. Another form of live work would be patrons visiting the cosmetology department to receive permanents or other services.

16. Master Copies - Original copies of slides, tapes or written materials set aside for the purpose of duplication.

17. Occupational Cluster - A group of occupations sharing a common core of competencies. Georgia's comprehensive high school vocational program is organized around this concept.

18. Occupational Inventory - A listing of tasks to be performed in a particular occupational area, grouped under duty classifications.

19. O.E. - Refers to the U. S. Office of Education. O.E. codes are a classification system (taxonomy) for occupational education programs.

20. Open Entry - Term meaning that a student may enter the program at any time and does not have to wait for quarter or semester breaks.

21. Open Exit - Term meaning that a student may leave a program any time he/she completes their occupational objective.

22. Performance Guide - A series of steps, arranged in a sequence ordinarily followed, which when completed may result in the performance of a task. Also called "teaching steps."

23. Performance Objective - A statement in precise, measurable terms of a particular behavior to be exhibited by a learner under specified conditions. It possesses each of the elements or characteristics specified below:

    a. Condition - The testing situation confronting the learner is clearly specified. This includes equipment provided or withheld, environmental constraints such as temperature, space, etc.

b. Performance - The specific behavior expected of the learner is stated.

c. Standard - The degree of acceptable performance is specified.

24. Performance Test - A test entailing not only the ability to answer questions, but measuring the students' ability to operate, manipulate, or perform a given task as well.

25. Program - An organized sequence of courses leading to an occupational objective. A program may contain one or more student exit points as defined by D.O.T. codes.

26. Program Objective - The outcome of a prescribed program of instruction. Usually expressed in terms of the occupation or job for which training is designed. D.O.T. codes are frequently used to identify program objectives or student exit points.

27. Self-Paced - Refers to a student moving through the prescribed training program at the fastest pace at which the student can meaningfully learn.

28. Sequencing - Putting any set or series of learning activities or tasks into proper order or sequence. Normally arranged from the simple to complex within groupings or blocks.

29. Software - Written or printed materials, slides, filmstrips, tapes, etc.

30. Student Manual - A document designed for use by students in a specific instructional program. It contains unit sheets, references, operational procedures or job sheets, etc.

31. Task - The smallest division of work in which a measurable output occurs. A logical and necessary step in the performance of a duty.

32. Task List - A listing of tasks performed by incumbent workers within a domain of interest. An example is a listing of all tasks performed by an automotive mechanic or by a worker in ornamental horticulture.

33. Unit - One "module" training materials; generally covering one learning task and programmed on one Unit Sheet. May cover more than one lesson.

34. Unit Guide - A curriculum guide sheet that lists a task and objective with the instructional activities, instructional materials, evaluation and approximate time required for a student to successfully complete the task.

35. V-TECS Catalog - A comprehensive collection of performance objectives, performance guides, criterion-referenced measures, and related data, organized by a job structure or career ladder within a domain of interest.

b. Performance - The specific behavior expected of the learner is stated.

c. Standard - The degree of acceptable performance is specified.

24. Performance Test - A test entailing not only the ability to answer questions, but measuring the students' ability to operate, manipulate, or perform a given task as well.

25. Program - An organized sequence of courses leading to an occupational objective. A program may contain one or more student exit points as defined by D.O.T. codes.

26. Program Objective - The outcome of a prescribed program of instruction. Usually expressed in terms of the occupation or job for which training is designed. D.O.T. codes are frequently used to identify program objectives or student exit points.

27. Self-Paced - Refers to a student moving through the prescribed training program at the fastest pace at which the student can meaningfully learn.

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Title II - Loydia Webber, Vocational Equity Coordinator
Title VI - Peyton Williams Jr., Associate Superintendent
of State Schools and Special Services
Title IX - Evelyn Rowe and Myra Tolbert, Coordinators
Section 504 - Jane Lee, Coordinator of Special Education

Inquiries concerning the application of Title II, Title VI, Title IX or Section 504 to the policies and practices of the department may be addressed to the persons listed above at the Georgia Department of Education, State Office Building, Atlanta 30334; to the Regional Office for Civil Rights, Atlanta 30323; or to the Director, Office for Civil Rights, Education Department, Washington, D.C. 20201.